Office of Solid Waste and
Emergency Response

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United States
Environmental Protection
Agency

Updating Remedy Decisions at Select Superfund Sites Summary Report FY 2004 and FY 2005

February 2007

Executive Summary (FY04–FY05)

Since FY96, EPA has been regularly updating its Superfund remedial decisions when appropriate. As described in the National Oil and Hazardous Pollution Contingency Plan (NCP 1990), remedies may be updated through either an Explanation of Significant Differences (ESD) or a Record of Decision (ROD) Amendment (see Section 300.435 (c)(2)(i) ands (ii)). In addition, Regions use a third type of remedy update for minor remedy changes and this is called "Additional Note to the Administrative Record File." Additional guidance on documenting the three kinds of post-ROD changes can be found in Chapter 7 of the document titled, "A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents," OSWER Directive 9200.1-23.P, dated July 1999 (http://www.epa.gov/superfund/resources/remedy/rods/index.htm).

New Memorandum in FY05 – Although EPA's initial guidance on remedy updates was issued in September 1996 (OSWER Directive 9200.2-22), in August 2005, EPA expanded the reform in a memorandum titled, "Re-Emphasize Use and Expanded Tracking of the Superfund Reform "Updating Remedy Decisions" " (OSWER Directive 9200.0-22-1). Both documents can be accessed on EPA's website: **www.epa.gov/superfund/programs/reforms/docs.pdf.**

New Reform Tracking in FY05 – In October 2005, the Remedy Update Reform was part of a broader effort to improve the workings of the program known as Superfund Cost Management Measures (OSWER Directive 9275.1-12-D). The documents mentioned above recommend that EPA Regions continue to update remedies when there is supporting data to do so and to expand the use of the reform to include non-technical as well as technical remedy changes.

This is the fifth summary report documenting every two years of progress since FY96. The four previous summary reports can be accessed on the same EPA website as previously mentioned.

Terminology

Remedy Update Reform was announced in October 1995, to keep selected Superfund remedies in line with advances in science and technology.

Technical Changes in remedies can result from additional data collection, modeling results, or differences in the original site conditions that need to be addressed in the selected remedy.

Non-technical Changes in remedies can result from new or additional institutional controls or changes in ARARs that need to be included in the selected remedy.

Cost Management Measures was a 2005 initiative to manage time and resources of the Superfund program more effectively.

Since its inception, Updating Remedy Decisions continues to be characterized as one of EPA's most successful Superfund reforms. This summary report shows that in FY04 and FY05, EPA updated **more than 130 remedies**, reducing estimated future cleanup costs by **more than $260 million** (gross savings). Other key successes and findings in this report include the following:

- Many remedy updates completed during FY04 and FY05 were the result of additional technical information gathered as part of the remedy design process. Other updates were the result of the need to implement institutional controls; non-technical changes in the applicable or relevant and appropriate requirements (ARARs), land use, or required cleanup levels; and State input or community preference which focused on either technical or non-technical modifications to the remedy.

- In FY04, the total estimated cost savings for remedy updates were in excess of $70 million, 92 percent of which was based on scientific and technological advancements. For remedy updates completed in FY05, the total estimated cost savings were in excess of $188 million, all of which was based on scientific and technological advancements. There were 27 remedy updates in FY04 that resulted in cost increases totaling an estimated $96.2 million, and there were 22 remedy updates in FY05 that resulted in cost increases totaling an estimated $84.8 million. The majority of the cost increase totals were attributable to the remedy updates for a small number of sites.
- Estimated cost savings for 135 individual remedy updates during FY04 and FY05 ranged from a few thousand dollars to more than $41.0 million, with most remedy updates generating savings less than $10.0 million. Of the 49 remedy updates that resulted in estimated cost increases, of more than $180.0 million, there was a median cost increase of $2.0 million.
- Remedy updates generally occurred in the remedial design phase of the cleanup process and were more likely to be documented with ESDs than ROD Amendments. During the two-year period, there were 109 ESDs and 26 ROD Amendments representing remedy updates with both cost savings and increases.
- Most remedy updates during FY04 and FY05 were initiated by parties outside of EPA *(e.g.*, potentially responsible parties (PRPs), States, communities, Federal facilities). During the two-year period, parties outside of EPA initiated 71 updates and EPA initiated 54 updates (these numbers do not include 10 updates initiated by more than one party).
- During the two-year period, the most commonly addressed medium was ground water (79 updates) followed by soil (65 updates). Seven other media types were addressed by remedy updates during FY04 and FY05.
- In FY05, more remedy updates were related to other Superfund initiatives than in previous years. Superfund's initiative to add new or supplementary institutional controls and a recent focus to optimize existing pump and treat systems for ground water remediation typically would be documented by an ESD or ROD Amendment.

Cumulative Summary (FY96–FY05)

Since its inception, Updating Remedy Decisions has continued to significantly impact Superfund sites across the country. From FY96–FY03, there were 520 remedy updates reducing future cleanup costs by more than $1.9 billion while at the same time increasing estimated future cleanup costs by $486.1 million. By including the FY04 and FY05 data, the cumulative totals for FY96–FY05 are 655 remedy updates reducing future cleanup costs by more than $2.1 billion, while at the same time increasing estimated future cleanup costs by $667.1 million.

Over the initial ten years of implementing the remedy update reform, EPA has shown overwhelming success regarding large savings of money, time, and resources. There is no clear pattern to the number of updates completed each year or whether they tend to result in more or less estimated cost savings or increases for a particular year. There does appear to be an overall trend of less estimated cost savings per change and an increase in the number of changes resulting in estimated cost increases.

Remedy Updates 10-Year Trend			
FY	# of Updates	Estimated Cost Savings (millions of dollar)	Estimated Cost Increases (millions of dollar)
96	64	$352.7	0
97	84	$394.9	$13.5
98	76	$282.1	$57.0
99	83	$430.9	$58.0
00	64	$185.0	$87.7
01	47	$84.1	$12.5
02	42	$58.7	$176.3
03	60	$87.6	$81.1
04	75	$72.5	$96.2
05	60	$188.2	$84.8
TOTALS	655	$2,136.7	$667.1

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1.0 Introduction

Updating Remedy Decisions, announced in the third round of Superfund Reforms in October 1995, is one of a broad range of administrative reforms undertaken to improve the efficiency, speed, and fairness of the Superfund program. Specifically, the Reform encourages the Regions to revisit selected remedy decisions at sites where significant new scientific information, technological advancements, or other considerations can be implemented in a manner that continues to protect human health and the environment while enhancing overall remedy cost effectiveness.

This report contains an evaluation of remedy updates completed during FY04 and FY05. Information regarding the progress of the reform, during the previous ten years, is available in four two-year summary reports and a cumulative four-year report.

Multi-year Summary Report	
Summary Report, FY 1996 and FY 1997	Updating Remedy Decisions at Select Superfund Sites, Summary Report, FY 1996 and FY 1997. July 1998. OSWER Directive 540-R-98-017. The Summary Report for FY96 and FY97 contains the background information of the Reform, a description of the Reform, the process for implementing the Reform, and Regional implementation plans from each of the ten EPA Regions.
	http://www.epa.gov/superfund/programs/reforms/docs/urd96-97.pdf
Summary Report, FY 1998 and FY 1999	Updating Remedy Decisions at Select Superfund Sites, Summary Report, FY 1998 and FY 1999. March 2001. OSWER Directive 540-R-01-00.
	http://www.epa.gov/superfund/programs/reforms/docs/urd98-99.pdf
Cumulative Summary Report FY 1996 Through FY 1999	Updating Remedy Decisions at Select Superfund Sites Cumulative Summary Report FY 1996 Through FY 1999. March 2001. OSWER Directive 9355.0-77.
	http://www.epa.gov/superfund/programs/reforms/docs/urd96-99.pdf
Summary Report, FY 2000 and FY 2001	Updating Remedy Decisions at Select Superfund Sites, Summary Report, FY 2000 and FY 2001. February 2003. OSWER Directive 9355.0-94.
	http://www.epa.gov/superfund/programs/reforms/docs/rem_report.pdf
Summary Report, FY 2002 and FY 2003	Updating Remedy Decisions at Select Superfund Sites, Summary Report, FY 2002 and FY 2003. September 2004. OSWER Directive 9355.0-107.
	http://www.epa.gov/superfund/programs/reforms/docs/rem_report.pdf

This report:

- ❑ Provides a summary of Superfund sites where remedies have been updated during FY04 and FY05;
- ❑ Highlights estimated future cost reductions (cost savings) or cost increases expected to result from updated remedies; and
- ❑ Presents stakeholders with information on the role of remedy updates in improving Superfund implementation.

Originally, EPA encouraged remedy updates to incorporate new technical information into existing site cleanups. Today, EPA continues to promote remedy updates that incorporate the latest science and technology into selecting and implementing Superfund remedial decisions. As a whole, these reforms were selected to make Superfund faster, fairer, and more efficient. The remedy update reform has achieved each of these goals.

It is important to emphasize that this initiative does not signal any variations in the Agency's current policies regarding site cleanup, including policies regarding remedy selection, treatment of principal threats, preference for permanent remedies, establishment of cleanup levels, or the degree to which remedies must protect human health and the environment. EPA remains committed to the protection of public health, welfare, and the environment.

EPA expanded the tracking of the Remedy Update Reform in August 2005 to include all changes, either technical or non-technical (OSWER Directive 9200.0-22-1 available on EPA's previously mentioned reform website). An example of a technical remedy change is monitoring data showing the presence of either additional contaminant or additional contaminants not previously identified in earlier data. An example of a non-technical remedy change is the inclusion of institutional controls.

2.0 FY04 and FY05 Results

EPA completed approximately 135 remedy updates in FY04 and FY05 representing a total estimated cost savings of more than $260.0 million in estimated site cleanup costs. Some decisions resulted in total estimated cost increases totaling approximately $180.0 million. The net estimated cost savings for the two-year period is approximately $80.0 million.

Updates during FY04 resulted in a total estimated cost savings of more than $72.5 million, most of which resulted from updates of the kind identified in the Reform Guidance. Updates during FY05 resulted in a total estimated cost savings of more than $188.2 million, many of which resulted from updates of the kind identified in the Reform Guidance.

(See the Reform Guidance, "Superfund Reforms: Updating Remedy Decisions," OSWER Directive 9200.2-22, dated September 27, 1996, at EPA's website: **http://www.epa.gov/superfund/programs/reforms/remedy/index.htm.)**

The estimated cost savings per update ranged from a few thousand dollars to $41.0 million, with the majority of EPA Regions reporting savings in each year reviewed. Exhibit 2.1 shows the amount of estimated savings for FY04 and FY05. (Note: Exhibit 2.1 includes all remedy updates identified in CERCLA Information System (CERCLIS) and through points-of-contact in each Region.)

Most of the remedy updates generated savings of less than $10.0 million per update, as shown in Exhibit 2.2. (Note: Cost estimates for several remedy updates are either unavailable to EPA or incomplete at the time of this writing. These are labeled NA/TBD (Not available/To be determined) in Appendices A, A.1 and A.2.)

EPA Regions also reported on updated remedies that generated cost increases during FY04 and FY05. The FY04 cost increases for 27 remedy updates totaled $96.2 million. The FY05 cost increases for 22 remedy updates totaled

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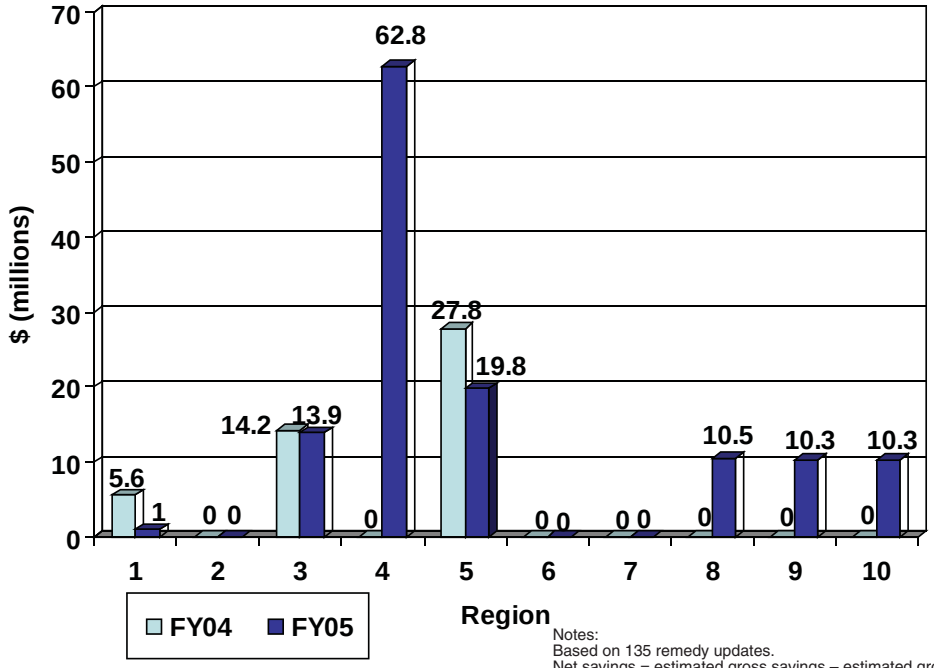
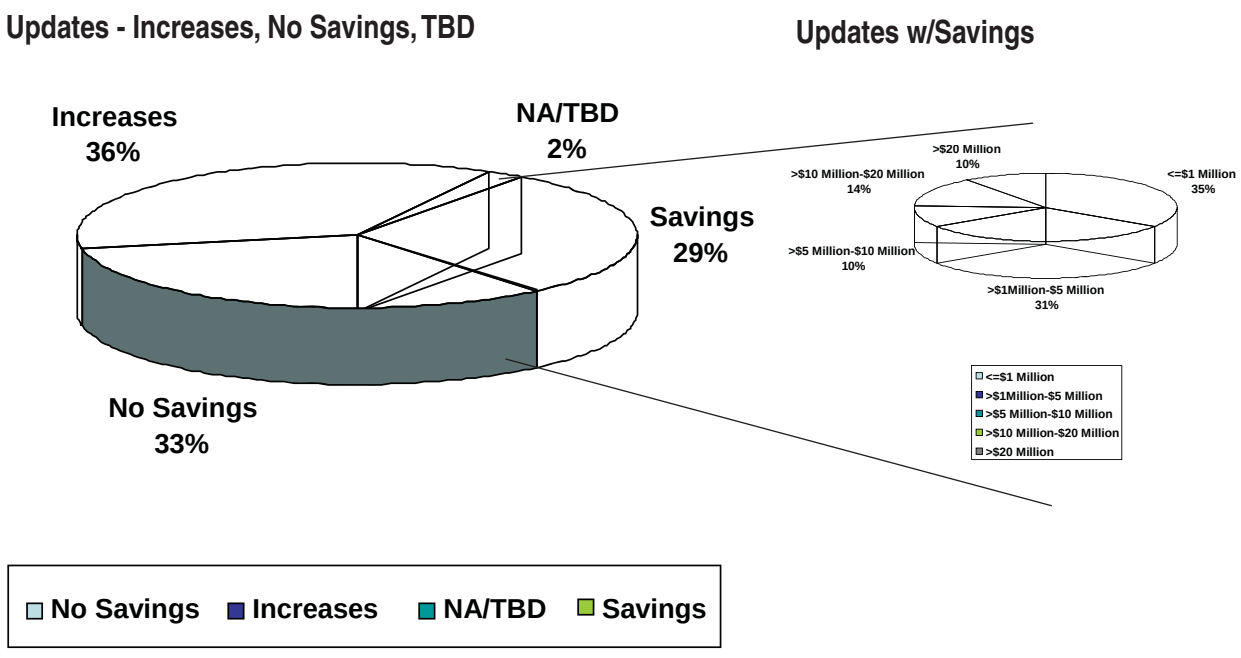
Exhibit 2.1: Estimated Remedy Update Net Savings by Region for FY04 and FY05



Notes:
Based on 135 remedy updates.
Net savings = estimated gross savings – estimated gross increase
negative net savings (i.e., net increases) are shown as zero (0)

Exhibit 2.2: Estimated Savings Per Remedy Update for FY04 and FY05



Notes:
Based on 135 remedy updates.

$84.8 million. Of the remedy updates generating estimated cost increases during FY04 and FY05, most were less than $5.0 million per update. The remedy update cost increases for FY04 and FY05 occur in all ten EPA Regions; only half of which had more than four increases during the two-year period.

Media

Recent advances in the area of soil and ground water science and remediation made these types of decisions good candidates for remedy updates. Exhibit 2.3 shows that during FY04 and FY05, updates of ground water remedies were the most common (79 updates), followed by soil remedies which includes subsurface soil (65 updates). The remaining updates pertained to seven other media, as depicted in Exhibit 2.3. These media are consistent with media typically found at contaminated Superfund sites.

More detailed information regarding remedy updates can also be found in Appendices A, A.1 and A.2. Specific remedy updates are listed by Region and site, and include the following information:

- Type and date of remedy update;
- Update initiator;
- Media involved;
- State and community involvement;
- Estimated resource demands;
- Estimated cost savings or cost increases; and
- Summary of remedy change and factual basis.

Exhibit 2.4 depicts the number of remedy updates that were completed in FY04 and FY05. It shows that not all remedy updates generated cost savings or cost increases. In some cases, the remedy updates generated neither cost savings nor cost increases; in other cases, the numbers are yet to be determined or were unavailable at the time of this report. This confirms that the summary totals for both years are conservative values for estimated cost savings and increases.

Exhibit 2.3: Remedy Updates by Medium for FY04 and FY 05

Medium	FY04	FY05	Total
Ground Water	39	40	79
Soil	41	24	65
Sediment	8	2	10
Waste	1	4	5
Surface Water	5	2	7
Air	1	0	1
Debris	3	1	4
Sludge	1	1	2
Other	9	2	11

*Other includes: fluvial tailings, source materials, soil gas, and tank contents

Notes:
Based on 135 remedy updates.

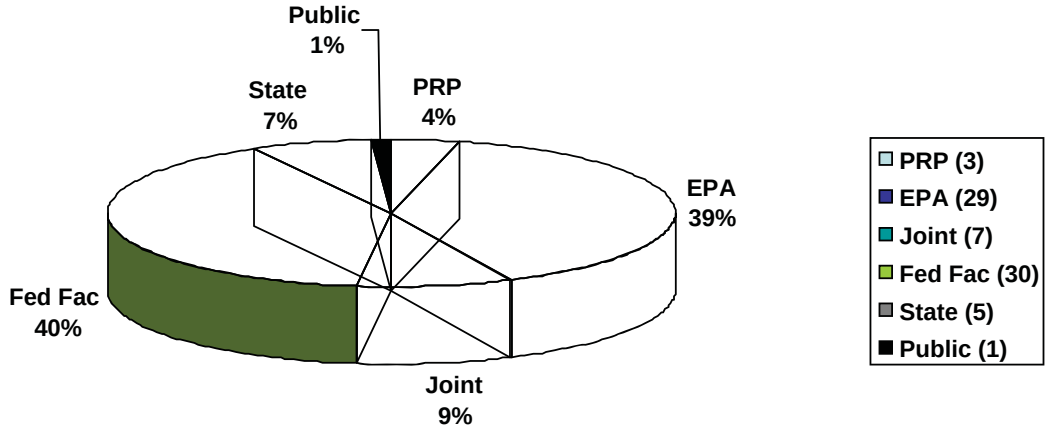
Exhibit 2.4: Number and Type of Remedy Updates for FY04 Through FY05

	FY04	FY05	Total
Total # of Remedy Updates	75	60	135
# Updates With Estimated Savings	20	19	39
# Updates With Estimated Increases	27	22	49
# Updates With No Savings	26	19	45
# Updates NA or TBD	2	0	2

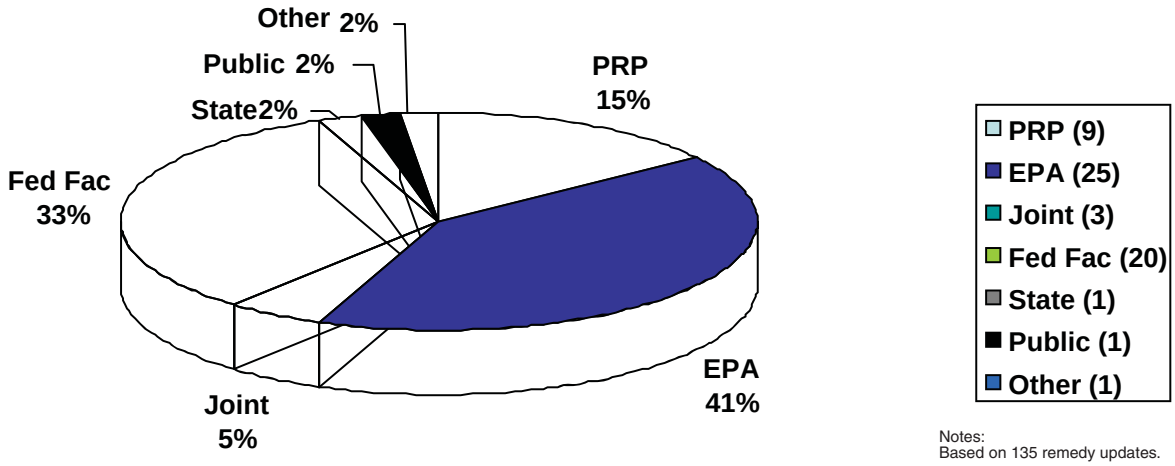
3.0 Remedy Update Process

The remedy update process is described in the 1996 Guidance and in the four previous two-year summary reports (http://www.epa.gov/superfund/programs/reforms/docs.htm#cleanup). The identification and prioritization, technical review, and implementation of remedy updates have not changed in this current report. As always, new information may be received or generated from different sources that could affect the selection or implementation of the selected remedy. This information may be supplied by a Potentially Responsible Party (PRP), a Federal agency conducting the cleanup, the support agency (e.g., another Federal agency or State/Tribe), or the public or other interested parties. Data for FY04 and FY05 indicate that 71 remedy updates were initiated by parties outside of EPA (e.g., PRPs, States, Federal facilities) (this number only contains single, listed initiators) compared to 54 updates initiated by EPA (see Exhibit 3.1). In addition, 10 remedy updates have joint initiators (this number includes any category that has 2+ initiators listed) because information arrived simultaneously from several different parties. Exhibit 3.1 shows that the relative percentage of remedy update initiators were not significantly different from FY04 to FY05. (FY05 Decrease site of Tar Creek, R6, was not included in any of these categories)

Exhibit 3.1: Remedy Update Initiator in FY04



Remedy Update Initiator in FY05



Notes:
Based on 135 remedy updates.

Although the types of new information that could affect remedy decision-making vary widely, the Reform Guidance recommends that EPA pay particular attention to information which shows that:

- Updating the remedy may result in a more cost-effective cleanup;
- Changes in physical limitations imposed by the site or the contaminants may warrant changes in the cleanup goals; or
- Changes in site conditions may warrant reducing the scope of the site monitoring after cleanup.

Fundamental Change may include a remedy update that involves an appreciable change or changes in the scope, performance, and/or cost of a remedy or may involve a number of significant changes that together have the effect of a fundamental change.

Significant Change may include a remedy update that generally involves incremental change to a component of a remedy that does not fundamentally alter the overall remedial approach.

Non-significant or Minor may include a remedy update that usually arises during design or construction when modifications are made to the functional specifications of the remedy to optimize performance and minimize cost.

3.1 Determination of Remedy Update Type

To characterize the remedy update type, EPA generally continues to consider three factors: scope, performance or cost. Based on an evaluation of these three factors and depending on the extent or scope of the modification being considered, the lead agency should determine the type of update involved (e.g., nonsignificant or minor, significant, or fundamental change to the scope, performance, or cost of the original remedy). An aggregation of nonsignificant or significant changes could result in a fundamental change overall.

For more information on remedy update type, see "A Guide to Proposing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents," OSWER Directive No. 9200.1-23P (July 1999). Enforcement decision documents may also need to be modified, depending on the type of remedy update and the language in the order or consent decree, if there is an order or consent decree.

The type of change generally will determine which of the following documents EPA uses to update the remedy: a memorandum or note to the Administrative Record for a nonsignificant or minor change; an ESD for a significant change; or a ROD Amendment for a fundamental change. As shown in Exhibit 3.2, there were 109 ESDs and 26 ROD Amendments completed during FY04 and FY05.

Exhibit 3.2: ESDs vs. ROD Amendments in FY04 and FY05

	FY04	FY05	Total
ESD	62	47	109
ROD A	13	13	26

In general, more remedy updates occur during remedy design and constitute a nonsignificant or significant but not fundamental change to the remedy. Consequently, most remedy updates correspond to at least one of the following situations:

- The scope of the remedy has changed (e.g., volume increase or decrease);
- The performance of the remedy can be modified or optimized (e.g., change in disposal or discharge point); or
- There is a more cost effective way to implement the remedy.

In some situations, additional contamination is identified or the original remedy does not meet the required cleanup levels specified in the ROD. In those cases, the determination for an updated remedy may result in estimated cost increases.

In FY04 and FY05, there was an increase in the number of remedy changes resulting from other Superfund initiatives. For example, there has been increased focus on the need to add new or revise existing institutional controls at Superfund sites and to optimize existing ground water pump and treat systems. Both of these actions will likely result in a ROD Amendment or ESD to document changes to the original selected remedy.

3.2 State/Tribal and Community Roles

State/Tribal Roles

States often play an important role in the modification of remedy decisions. Section 300.515 of the NCP and the Model CERCLA Remedial Design/Remedial Action (RD/RA) Consent Decree (which forms the basis for most consent decrees) address the States' opportunity to review and comment on specified steps in the remedy selection process. CERCLA section 104(d) cooperative agreements between EPA and States may address modification following an update to a remedy. Furthermore, as reflected in section 121(f) and in the Model Consent Decree, EPA typically provides the State with a reasonable opportunity to review and comment on any proposed modifications. Additional information regarding the role of States and support agencies in the remedy modification process can be found in "A Guide to Preparing Superfund Proposed Plans, Records of Decision and Other Remedy Selection Decision Documents," OSWER Directive 9200.1-23P (July 1999).

Indian tribes generally are afforded substantially the same treatment as States with respect to certain provisions of CERCLA (see CERCLA Section 126; NCP Section 300.505). As encouraged by the NCP, Federally-recognized Indian tribes often play an important role in the cleanup of Superfund sites. (see NCP Section 300.515).

Community Roles

Several remedy updates in FY04 and FY05 involved significant State participation and/or community involvement. In addition to a formal public comment period that is initiated in the case of a fundamental update (i.e., ROD Amendment), most remedy updates, regardless of their significance, have a substantial community involvement component (see NCP Section 300.435(c)(2)(i) and (ii)). For example, documents pertaining to the site, including any

information on remedy updates, typically are placed in the Administrative Record or at the site repository located near the site (e.g., local library). Other activities, including a public availability session, public meetings, issuance of fact sheets about the site, and the release of an amended proposed plan, may allow the surrounding community and other interested parties an opportunity to learn more about the site and present their opinions on remedial activities. Refer to the individual site summaries in Appendices A.1 and A.2 for specific activities related to State participation and community involvement that were part of the remedy update process for each update completed during FY04 and FY05.

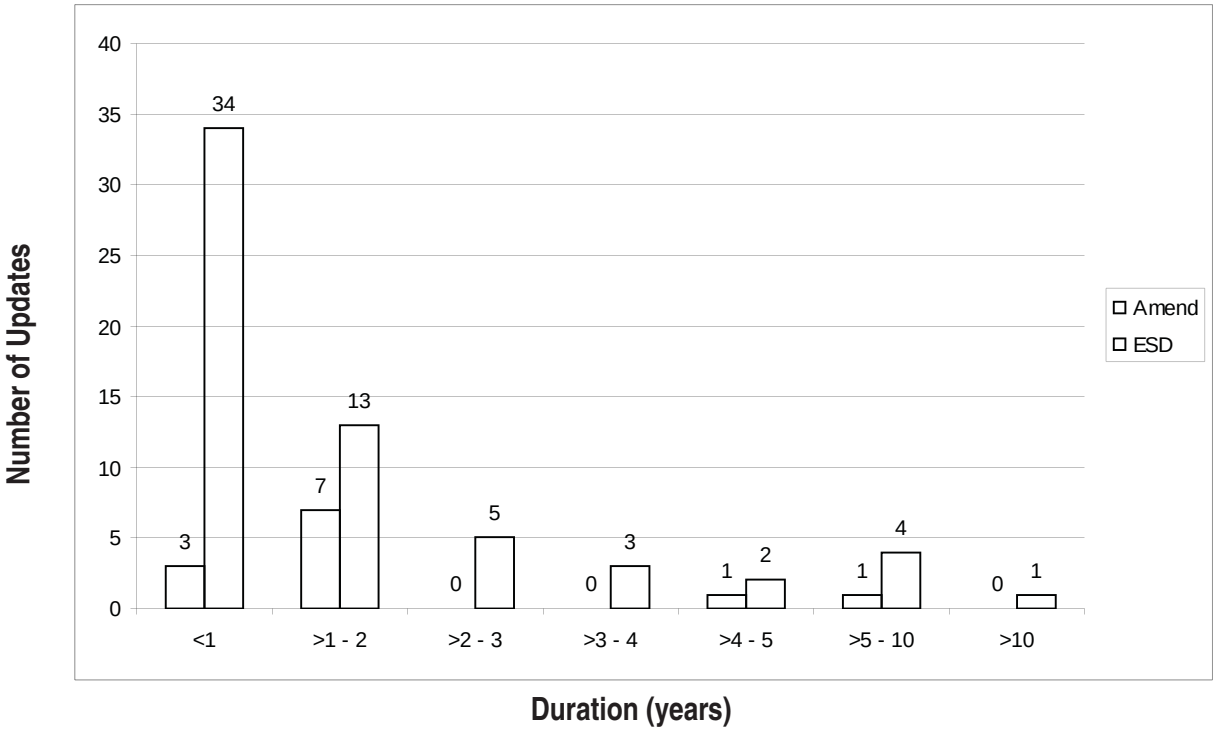
3.3 Remedy Review Duration

Reviewing site-specific material and completing the ESD or ROD Amendment took less than a year for a majority of the remedy updates completed during FY04 and FY05 (see Exhibit 3.3). Of note, there is a slight increase in the number of remedy updates with extended review periods. An examination of sites with longer review periods suggests that the review durations could have been influenced by the following:

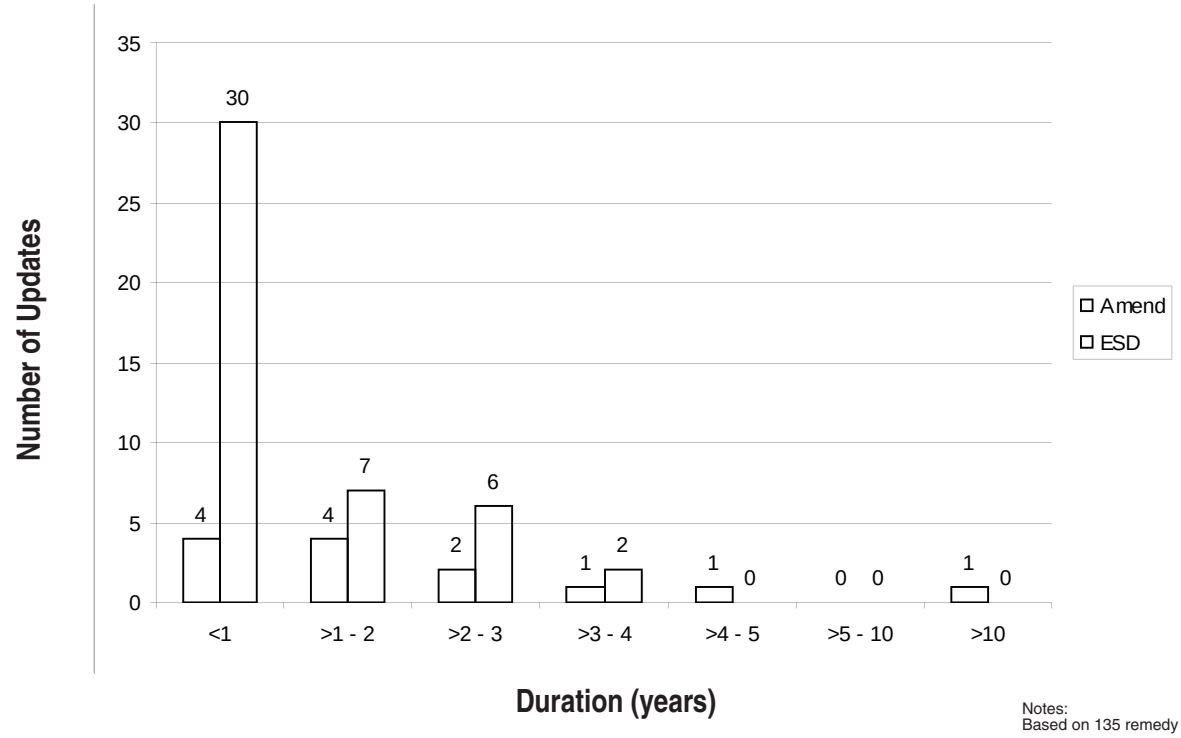
- A lengthy, but important public involvement phase;
- An extensive verification/pilot test period following the discovery of new performance, technical, or toxicological data;
- The discovery of unexpected contamination late in the remedy design phase; or
- A redefinition of land use.

Section 4.2 provides specific examples of remedy changes for reviews that lasted more than one year.

Exhibit 3.3: Durations for FY04 Remedy Updates



Durations for FY05 Remedy Updates



Notes:
Based on 135 remedy updates.

4.0 Lessons Learned

During FY04 and FY05 reform implementation, EPA has continued to gain insight into ways of successfully updating site remedies. The following sections detail information collected regarding reform benefits, site examples, and comments from stakeholders.

4.1 Benefits

This Reform has been very successful in bringing past decisions in line with current science and technology. By doing so, these updates improve the cost effectiveness of site remediation while ensuring reliable short- and long-term protection of human health and the environment. The quantifiable results of this Reform have been previously announced in EPA's testimony before Congress, described in private industry evaluations of Superfund reforms, and included in a report by the U.S. General Accounting Office. EPA's positive record of responding to remedy update requests made by outside parties has contributed to the success of this Reform.

4.2 Site Examples

In many cases, remedies were updated as a result of a decrease or increase in contaminant volume or an inability to achieve desired results in a test of the ROD-selected treatment or contaminant technology during the remedial design phase of the cleanup. Although all updates described in Appendix A represent site-specific situations, it is possible to use some as examples of typical remedy update situations that occurred during FY04 and FY05.

Updates Based on New Technology

Some updates were the result of new technology that was not considered at the time of the original remedy. At **Crossley Farms in Pennsylvania,** EPA changed the technology identified in the selected remedy for ground water treatment from an on-site plant using an air stripping process to an on-site plant using an Advanced Oxidation Process (AOP). The treatment technology review was performed based on findings during the design investigation regarding tetrachloroethylene (TCE) concentrations. The review identified the AOP approach and it was pilot tested at the site. Based on the results of the pilot, an ESD was prepared to change the treatment technology for the extracted ground water to an AOP system. This remedy update will result in an estimated savings of $1.3 million.

At **Selma Treating Co. in California**, the original ground water cleanup approach is being supplemented with a new type of remedy. The original remedy established pump and treat (using precipitation, coagulation and flocculation technology), as the remedy for ground water. However, EPA subsequently modeled the effectiveness of plume containment and recovery and the results indicated that 30 years of pumping under the current well configuration would not be sufficient to completely mitigate the ground water contamination at the site. As a result, EPA decided to examine modifications to enhance effectiveness of the existing system. Based on the consideration of newly available

technology, process options, and additional data gathered through on-site pilot testing, EPA decided to supplement the existing pump and treat system with *in-situ* bioremediation. The combined cleanup approach in the updated remedy should shorten the remediation timeframe and lower the long-term cost by an estimated $29.6 million.

Updates Based on New Performance Data

New performance data can also provide the needed basis for updating remedies. For instance, at **Peak Oil Co./Bay Drum Co. in Florida,** new hydro-geological data collected during post-ROD activities indicated that the ground water remedy should be reevaluated. Based on the findings during these activities (e.g., decreased concentrations, reduced aquifer flow rates) a Focused Feasibility Study was conducted and several new remedy alternatives were considered. The recommended alternative involving enhanced *in-situ* bioremediation with source area treatment and monitored natural attenuation was selected in the ROD Amendment and will result in an estimated savings of $9.0 million.

Coordinating the Update

Some remedy updates involve coordination among EPA, other Federal agencies, and State and local government agencies. For example, at **the Sidney Landfill in New York,** part of the original remedy included the extraction and treatment of contaminated ground water in a "hot spot." However, based on the results of ground water testing and sampling, EPA determined that a ground water extraction and treatment system already operating at the nearby Richardson Hill Road Landfill Superfund site was capturing contaminated ground water from the Sidney Landfill site, alleviating the need for a separate system. The opportunity to utilize the system already in place at the nearby site resulted in an estimated $0.5 million savings in the updated remedy.

State Input in the Update

States can be either the lead or support agency for a remedy update. The Commonwealth of Pennsylvania Department of Environmental Protection was the support agency for the remedy update at **Commodore Semiconductor Group in Pennsylvania**. The original ROD required the creation of a ground water management zone with restrictions on installation of new wells in an area of contamination. However, the adoption of regulations by Pennsylvania's Montgomery County Board of Health Department/Division of Water Quality Management now provides a mechanism for minimizing exposure to site-related contaminants that exceed their respective Maximum Contaminants Levels (MCLs). They also provide a system for EPA to track and confirm where and when any new wells may be installed. Therefore, the requirement of the creation of a ground water management zone is no longer warranted and has been removed in the remedy update.

Community Preference

Community preference can have a significant impact in addressing site contamination. For example, at **Ruston Foundry in Louisiana,** discussions between the city and the community resulted in changing the proposed future site reuse from recreational to industrial. This change in land use necessitated revisions to the risk assessment, which in turn reduced the estimated waste to be addressed because of new less stringent cleanup levels. While the updated remedy will require future operation and maintenance (O&M) activities, Five-year Reviews, and institutional controls, there will still be an estimated cost savings of $2.3 million.

Cost Increases

While the Reform Guidance is aimed at controlling all site costs, there are remedy updates that result in cost increases. At **the Northwest Pipe & Casing/Hall Process**

Company in Oregon, a remedy update became necessary when site conditions were encountered during Phase 1 (soil hot spots removal) that required additional activities not anticipated or described in the original ROD. Wetlands were discovered on the site, resulting in the inclusion of wetland ARARs and development of a restoration measure to compensate for the loss of existing wetlands resulting from the soil cap placement. In addition, during the remedial design circumstances regarding available analytical methods for the contaminant vinyl chloride resulted in revised soil cleanup levels. An estimated cost increase of $0.1 million resulted.

Similarly, at **the Hanford 100-Area in Washington**, an ESD was required to add newly discovered waste sites. While the original ROD contained 209 waste sites, ongoing remedial activities identified 28 newly discovered waste sites that have a potentially unacceptable risk to human health and the environment. As a result, the estimated cost increase was $32.0 million.

Timeframe for Completing Remedy Updates

The time needed to complete an update varies with each site. In some instances, exploring other remedies takes years of review and completion. At **the Solid State Circuits, Inc. in Missouri,** the review for the remedy update took nearly eight years. Originally, the remedy included ground water extraction wells, an onsite treatment plant, and monitoring wells to verify compliance with the performance standards. However, the PRP submitted a request to explore innovative technologies to enhance the site's ground water remediation. Based on their review, the PRP proposed to use a horizontal well to assist in the flushing of TCE contamination and, after the installation and initial testing of the horizontal well, they conducted a successful pilot study. The ESD documents the permanent use of the innovative horizontal well to enhance the remediation of the TCE plume.

In contrast, a review for the remedy update at **LaSalle Electrical Utilities in Indiana** took approximately one month to complete. The original remedy required the installation of a ground water pump and treat system to remediate the ground water to drinking water standards (i.e., MCLs). The treated ground water was to be discharged to the local Publicly Owned Treatment Works (POTW). The ESD recognizes the implementation of two phyto-remediation plots as a remedy enhancement with the significant difference being that portions of the treated ground water would be re-directed and utilized for irrigation of the phyto-remediation plots instead of being discharged to the POTW. There were no resultant estimated savings or costs.

5.0 Conclusion

EPA and outside parties continued to consider Updating Remedy Decisions a successful Reform in both FY04 and FY05. The number of remedies updated by each Region during FY04 and FY05 clearly shows that all ten EPA Regions are implementing this Reform, with more than half of the Regions reporting estimated cost savings of more than $10.0 million for the two fiscal years combined. All ten EPA Regions continue to evaluate requests to review old Fund-lead remedies, as well as consider updates to more recent remedies that may not be up-to-date with current science or technology. Regions also continue to encourage outside parties to submit remedy update requests to EPA when new technical and non-technical information exists to support them. Typically, EPA and outside parties share the benefits of both cost and time savings as a consequence of implementing the updated remedy.

Interested parties should review the existing Reform Guidance (OSWER Directive 9200.2-

22) for basic information concerning the Reform. Additional guidance on remedy updates is included in the updated Record of Decision Guidance (see "A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents," OSWER Directive 9200.1-23P, July 1999 **http://www.epa.gov/superfund/resources/remedy/rods/index.htm**). Specific questions on implementation of the Reform may be directed to Matt Charsky of the Office of the Office of Superfund Remediation and Technology Innovation by telephone at (703) 603-8777, e-mail at charsky.matthew@epa.gov, or FAX at (703) 603-9102. Each Region also has a remedy update contact who can be reached by contacting the Superfund Program office in any of EPA's ten Regional offices.

Acknowledgments

This report was made possible by the dedicated efforts of numerous EPA Superfund staff. Regional remedial project managers (RPMs) responsible for considering and implementing remedy updates at Superfund sites are to be commended for making these changes to select the best technologies available at Superfund sites nationwide.

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Appendix A:

Summary of Remedy Update Decisions for FY04 and FY05

Note: The information and data presented in Appendix A have been supplied to EPA headquarters by Regional offices. The data is subject to occasional updates as new information is received, thus the data in Appendix A data should be used for informational purposes only. The types of remedy updates completed during FY04 and FY05 are ROD Amendments (ROD-As) and Explanation of Significant Differences (ESDs).

Summary of Remedy Update Decisions for FY04

Region	# With No Sav.	# of TBD	# With Est. Sav.	# With Est. Incr.	Estimated Savings	Estimated Increase	Change Initiator						Type of Change	
							PRP	EPA	State	Fed. Fac.	Public	Joint	ESD	ROD-A
1	1	0	1	2	$13.1M	$7.5M	1	1	0	2	0	0	2	2
2	1	0	1	4	$0.5M	$19.6M	0	5	0	1	0	0	6	0
3	9	0	4	2	$14.4M	$0.2M	0	10	0	3	0	2	13	2
4	7	1	1	4	$10.0M	$19.8M	2	3	0	8	0	0	13	0
5	3	0	7	2	$28.3M	$0.5M	0	5	3	2	0	2	9	3
6	0	0	2	1	$1.1M	$3.5M	0	0	0	0	1	2	2	1
7	0	1	0	0	TBD	$0	0	0	1	0	0	0	1	0
8	1	0	0	2	$0	$3.6M	0	0	0	2	0	1	3	0
9	1	0	4	3	$5.1M	$7.6M	0	3	1	4	0	0	5	3
10	3	0	0	7	$0	$33.9M	0	2	0	8	0	0	8	2
Total	26	2	20	27	$72.5M	$96.2M	3	29	5	30	1	7	62	13

62 ESDs

26 2 20 27

13 ROD-As

75 updates

75 updates

Summary of Remedy Update Decisions for FY05

Region	# With No Sav.	# of TBD	# With Est. Sav.	# With Est. Incr.	Estimated Savings	Estimated Increase	Change Initiator							Type of Change	
							PRP	EPA	State	Fed. Fac.	Public	Joint	Other	ESD	ROD-A
1	1	0	3	2	$4.5M	$3.5M	1	4	0	1	0	0	0	6	0
2	3	0	0	6	$0	$21.7M	1	6	0	1	1	0	0	7	2
3	3	0	1	2	$14.3M	$0.4M	2	0	0	4	0	0	0	5	1
4	3	0	6	2	$76.4M	$13.6M	1	4	0	6	0	0	0	7	4
5	1	0	2	3	$39.0M	$19.2M	1	1	1	1	0	2	0	4	2
6	0	0	1	1	$0.1M	$3.2M	0	0	0	0	0	1	1	2	0
7	5	0	0	1	$0	$0.4M	2	3	0	1	0	0	0	5	1
8	0	0	1	2	$12.3M	$1.8M	1	1	0	1	0	0	0	2	1
9	2	0	3	3	$31.3M	$21.0M	0	6	0	2	0	0	0	6	2
10	1	0	2	0	$10.3M	$0	0	0	0	3	0	0	0	3	0
Total	19	0	19	22	$188.2M	$84.8M	9	25	1	20	1	3	1	47	13

19 0 19 22

60 updates

47 ESDs

13 ROD-As

60 updates

Appendix A.1:

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Note: The information and data presented in Appendix A.1 represent only a portion of the information available in the decision document. If more information is needed, please refer to the site's Explanation of Significant Differences (ESD), ROD-Amendment (ROD-A), memo-to-file, or letter.

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 1 Savings – FY 04						
Region 1 Dover Municipal Landfill, NH	1991 9/04 ROD-A	02/03 09/04	PRP	Soil	EPA issued a separate Technical Assistance Grant and conducted a public meeting, State had comments on the change and these were addressed so that State concurred with the ROD-A	Fed = 1,600 hours Contr. = None Est'd Savings = None
	Type of Change: From – Capping, diversion/interceptor trench to capture contaminated leachate; To – Air-sparging trench.					
	Factual Basis: Additional study done by PRPs.					
Region 1 Parker Sanitary Landfill, VT	04/95 07/04 ESD	2004 07/04	EPA	Ground water	VT Department of Environmental Conservation	Fed = None Contr. = $0.03M Est'd Savings = $13.1M
	Type of Change: From – Ground water pump and treat at source area and natural attenuation down-gradient; To – Permeable reactive barrier at the source area and bio-enhanced natural attenuation in down-gradient area (30 year estimate).					
	Factual Basis: Results of additional hydrogeologic studies conducted under a revised Feasibility Study.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 1 Savings – FY 05						
Region 1 Central Landfill, RI	06/94 09/05 ESD	01/05 09/05	EPA	Ground water	State concurrence	Fed =200 hours Contr. =$10,000 Est'd Savings = $4.0M
	Type of Change: From – Treating the hot spot ground water on-site using a UV chemical oxidation system (UV/OX); To – Removed this requirement.					
	Factual Basis: Bench scale tests indicate that a UV/OX system may be technically feasible; however, these results also indicate that direct discharge of the extracted hot spot ground water to an existing Publicly Owned Wastewater Treatment Plant is a similarly effective yet less costly treatment approach.					
Region 1 Keefe Environmental Services, NH	03/88 06/05 ESD	03/03 06/05	EPA	Ground water, soil	State Concurrence	Fed. = 1000 hours Contr. = $0.4M Est'd Savings = Net = $0 (savings for soil, increase for ground water)
	Type of Change: From – Pumping and treating of contaminated groundwater onsite using air stripping and activated carbon technologies; To – The removal of the air stripper and carbon adsorption units and replacing them with a high pressure oxidation system, which treats both the Site related VOCs identified in the 1998 ROD and the 1,4-dioxane documented in this ESD.					
	Factual Basis: A recently identified contaminant of concern at the site necessitated a modification to the existing ground water treatment system. Additionally, as part of the transfer to the State from LTRA to O&M, an onsite soil spoils area was required to be removed and disposed off-site.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region Site Name, State OU	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands – Fed/Contr. Est'd Cost Savings
Region 1 Linemaster Switch Corp, CT	07/93 12/04 ESD	06/04 12/04	PRP	Soil	State concurrence	Fed = N/A Contr. = N/A Est'd Savings = $0.1M
	Type of Change: From – Soil vapor extraction system; To – Ground water pump and treatment system (air stripper and carbon).					
	Factual Basis: Operation and maintenance data supports effectiveness of GW systems and flushing to meet soil goals.					
Region 1 Norwood PCBS, MA	09/89 12/04 ESD	2002 2004	EPA	Ground water	State concurrence	Fed =200 hours Contr. = None Est'd Savings = $0.4M
	Type of Change: New ground water cleanup levels set.					
	Factual Basis: Based on re-classification of ground water under site to non-drinking water source.					

Region 2 Savings – FY 04						
Region 2 Colesville Municipal, NY	03/91 07/04 ESD	04/00 07/04	EPA	Ground water and Surface water	Full State involvement; community expressed no opinion.	Fed = 100 hours Contr. = None Est'd Savings = None
	Type of Change: From – Spring and a low-lying wet area contaminated with site-related pollutants, in the vicinity of the landfill. Contaminated water from the spring and the low-lying wet area were discharging to surrounding areas; To – Prevention of the migration of contaminated water from the low-lying wet area.					
	Factual Basis: In April 2000, during a site inspection performed as part of the five-year review process, EPA found a spring and a low-lying wet area contaminated with site-related pollutants, in the vicinity of the landfill. Contaminated water from the spring and the low-lying wet area could discharge to surrounding areas.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 2 Sidney Landfill, NY	09/95 09/04 ESD	11/01 09/04	EPA	Ground water and Surface water	Full State involvement; community expressed no opinion.	Fed = 100 hours Contr. = None Est'd Savings = $0.5M
	Type of Change: From – Construction of four independent closure caps over several disposal areas and extraction and treatment of contaminated ground water located in a ground water hot spot; To – No need for the ground water extraction and treatment system onsite.					
	Factual Basis: Based on the results of ground water testing and sampling, EPA determined that a ground water extraction and treatment system already operating at the nearby Richardson Hill Road Landfill Superfund site was capturing contaminated ground water from the Sidney Landfill site, alleviating the need for a separate system.					
Region 2 Savings – FY 05						
Region 2 Chemical Leaman Tank Lines, Inc., NJ	09/90 06/05 ESD	06/04 06/05	PRP	Ground water	Yes	Fed = 45 hours Contr. = None Est'd Savings = None
	Type of Change: From – Discharge into the Delaware River (3 miles away from the site); To – Discharge into a local tributary.					
	Factual Basis: The change provided for lower construction and maintenance costs while maintaining the protectiveness of the remedy.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 2 Grand Street Mercury, NJ	09/97 09/05 ESD	11/04 09/05	EPA	Ground water	Yes	Fed = 30 hours Contr. = None Est'd Savings = None
	Type of Change: From – No decision yet; To – No further action for the ground water.					
	Factual Basis: Ground water underlying the site does not contain mercury at levels that would pose an unacceptable risk to human health or the environment. Modified remedy remains protective of current and future land owners or occupants. This action is PRP-lead, as such there is no cost savings for the government.					
Region 2 Hertel Landfill, NY	09/91 01/05 ROD-A	2002 01/05	EPA	Ground water	Yes	Fed =160 hours Contr. = None Est'd Savings = None
	Type of Change: From – Ground water extraction and treatment; To – Institutional controls and long-term monitoring.					
	Factual Basis: Sediment and ground water data indicate stability and consistency in site-related ground water contaminant levels. As well, there would be negative impacts on the wetlands from the originally proposed ground water treatment process.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 3 Savings – FY 04						
Region 3 Commodore Semiconductor Group, PA	09/92 09/04 ESD	03/04 09/04	EPA	Ground water	New drinking water standards set by Montgomery County Board of Health Department's Division of Water Quality brought about the changes to the ROD	Fed = 160 hours Contr. = None Est'd Savings = None
	Type of Change: From – Construction of public water supply lines, maintenance of whole-house carbon filtration systems, installation/operation/maintenance of ground water extraction wells, air strippers and vapor phase carbon units, sampling, creation of GW management zone with restrictions on installation of new wells; To – Remove requirement for the creation of GW management zone, incorporate two deeds of grants: one describing an easement across property for the purpose of constructing and maintaining buildings for treating and transporting water, the other easing the right-of-way upon and across property for the purpose of constructing, placing and operating pipelines and other equipment required for transporting water.					
	Factual Basis: The adoption of regulations by Montgomery County Board of Health Department's Division of Water Quality Management provides a mechanism for minimizing exposure to Site-related contaminants that exceed their respective MCLs. They also provide a system for EPA to track and confirm where and when any new wells may be installed. Therefore the requirement of the creation of a GW management zone is no longer warranted.					
Region 3 Crossley Farm, PA OU 2	09/01 07/04 ESD	01/03 07/04	EPA	Ground water	PA DEP is the support agency and it concurs with ESD	Fed =120 hours Contr. =120 hours Est'd Savings =$1.3M
	Type of Change: From – On site plant using air stripping; To – An on-site plant that will use an advanced oxidation process, removal and off-site disposal of DNAPL from the water prior to treatment.					
	Factual Basis: Findings during the design investigation at the Site led to the ESD. Analytical results indicated TCE concentrations were high, indicating that TCE DNAPL is at or near the solubility level. After these findings, a treatment technology review showed that an Advanced Oxidation Process would be successful.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 3 Cryochem, Inc., PA OU 1	09/89 08/04 ESD	08/03 08/04	EPA	Drinking water	PADEP reviewed	Fed = 30 LOE hours Contr. = 400 LOE hours Est'd Savings = $0.5M
	Type of Change: New cleanup level for 1,1-DCA; new contaminant, 1,4-Dioxane, identified.					
	Factual Basis: During the 5-year review, EPA reviewed available scientific studies and did not find a current oral Cancer Slope Factor for 1,1-DCA so they decided to use a generic risk-based concentration - which is the new level. Since EPA issued the ROD for OU1, they learned another contaminant, 1,4-dioxane, was likely to be presenting a risk and it was added to the list of contaminants to be monitored.					
Region 3 Cryochem, Inc., PA OU 2	09/90 08/04 ESD	08/03 08/04	EPA	Ground water	PADEP reviewed	Fed =50 LOE hours Contr. = 600 LOE hours Est'd Savings = None
	Type of Change: New cleanup level for 1,1-DCA, new contaminant, 1,4-Dioxane, identified..					
	Factual Basis: During the 5-year review, EPA reviewed available scientific studies and did not find a current oral Cancer Slope Factor for 1,1-DCA so they decided to use a generic risk-based concentration - which is the new level. Since EPA issued the ROD for OU1, they learned another contaminant, 1,4-dioxane, was likely to be presenting a risk and it was added to the list of contaminants to be monitored.					
Region 3 Dublin TCE, PA	09/02 08/04 ESD	05/04 09/04	EPA	Ground water	PADEP concurred in letter dated 6/29/04.	Fed = 60 LOE hours Contr. = None Est'd Savings = None
	Type of Change: From – Start date of the three year review period at the date of the ROD; To – Start date of three year review at the date of the commencement of In-Situ Chemical Oxidation (ISCO) start-up.					
	Factual Basis: Needed to allow for an adequate time period for ISCO to be demonstrated and evaluated.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 3 Letterkenny Army Depot, PA OU 1	08/91 05/04 ESD	01/04 05/04	U.S. Army	Soils	Yes	Fed = N/A Contr. = N/A Est'd Savings = None*
	Type of Change: Implement institutional controls and cap maintenance plan. * ESD added O&M requirements for landfill.					
	Factual Basis: Institutional Controls for waste left in place omitted from original ROD.					
Region 3 MW Manufacturing, PA OU 5	12/97 09/04 ESD	08/04 09/04	PRP, EPA	Soils	PADEP	Fed = None Contr. = None Est'd Savings = None
	Type of Change: From – Excavation of two feet of soils underneath the Fluff piles; To – Excavation of soils dependent on observations made in the field.					
	Factual Basis: New Site information obtained during the Remedial Action phase.					
Region 3 Osborne Landfill, PA	09/90 06/04 ESD	2004 06/04	EPA	Ground water	PADEP approval.	Fed = 30 LOE hours Contr. = None Est'd Savings = None
	Type of Change: From – Clean up to "background levels" as determined by a Pennsylvania ARAR; To – Clean up to Federal MCL.					
	Factual Basis: Changes to MCLs were made and State ARARs were withdrawn.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 3 Paoli Rail Yard, PA	07/92 09/04 ESD	08/04 09/04	EPA	Soil	Minimal	Fed = 80 - 160 hours Cont. = None Est'd Savings = None
	Type of Change: From – Excavation and on-site treatment of soils, excavation and treatment of residential soils, excavation and treatment of stream sediments; To – Inclusion of off-site disposal of soils and sediments when necessary.					
	Factual Basis: This ESD will provide another disposal and/or treatment option for PCB contaminated stream sediments identified during the remedial design or during future monitoring.					
Region 3 Patuxent River Naval Air Station, MD Site 6A OU 1	9/99 9/04 ROD-A	2003 08/04	Navy	Soil	MDE approval as well as public comments	Fed = N/A Contr. = N/A Est'd Savings = $1.7M
	Type of Change: From – Constructing an asphalt cover over the soil and implementing institutional controls; To – No action.					
	Factual Basis: Change in future land use of the site and additional surface and subsurface soil sampling.					
Region 3 Recticon/Allied Steel Corp., PA	06/93 09/04 ESD	01/04 09/04	EPA	Soil	PADEP approval.	Fed = 120 LOE hours Contr. = None Est'd Savings = None
	Type of Change: From – Institutional controls prohibiting excavation of soils on a portion of the Site where elevated levels of TCE was detected and prohibiting construction of new wells at the Site until ground water performance standards have been met; To – Removing these ICs.					
	Factual Basis: New findings show that the levels of TCE in the soils do not present a human health risk and are not contributing to ground water contamination at the Site.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 3 Standard Chlorine of Delaware, Inc., DE OU 1, 2	03/95 09/04 ROD-A	10/03 09/04	EPA	Ground water, soils, sediments	Public meeting 5/4/04. DNREC concurred.	Fed = $6.2M Contr. =$0.1M Est'd Savings = $10.9M
	Type of Change: Additional action: off-site incineration of bulk liquid chemicals.					
	Factual Basis: The original ROD was issued when the plant was still operating and using these chemicals. The plant is no longer in operation and these chemicals need to be addressed.					
Region 3 York County Solid Waste and Refuse Authority Landfill, PA	12/94 09/04 ESD	09/02 09/04	PRPs, EPA	Ground water	10/04 Notice in "York Daily Record"	Fed = None Contr. = None Est'd Savings = Minimal savings
	Type of Change: From – Ground water extraction and air stripping, carbon filter treatment and/or provision of bottled water for affected private wells, maintenance of cap and the passive gas venting system, sampling of ground water and treated water; To – Elimination of these actions as EPA-required actions.					
	Factual Basis: These actions are being done under State Agreements and EPA is no longer responsible for conducting them, although they will continue to ensure they are completed. The site will be deleted from the NPL.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 3 Savings – FY 05						
Region 3 Aberdeen Proving Ground (Edgewood Area), MD	10/94 09/05 ESD	07/04 09/05	US Army	Ground water	Public appraised in monthly meetings of ESD, no public objections to the ESD. MD DEP agreed with ESD changes.	Fed = N/A Contr. = N/A Est'd Savings = Minor savings
OU 4	**Type of Change:** From – A subsurface trickling system to allow introduction of liquids to accelerate corrosion and release of contaminants from containers and rounds of chemical weapons; To – Surface system for air monitoring.					
	Factual Basis: The subsurface system was constructed but never used due to technical concerns. There was a subsurface air monitoring system constructed but also not used for technical reasons.					
Region 3 Aberdeen Proving Ground (Edgewood Area), MD	09/91 03/05 ESD	01/04 03/05	US Army	Ground water	Public appraised in monthly meetings of ESD, no public objections to the ESD. MD DEP agreed with ESD changes.	Fed = N/A Contr. = N/A Est'd Savings = Minor savings
OU 5	**Type of Change:** From – Leachate extraction/GW capture system to collect leachate/contaminated GW from the upper and lower aquifers; To – Pumping the upper aquifer harder and not pumping the lower one at all. Modifications to the GW treatment plant.					
	Factual Basis: More hydrogeology data and GW data was collected during remedial design showing that it was not prudent to pump the lower aquifer.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 3 Aberdeen Proving Ground (Edgewood Area), MD OU 11	09/96 05/05 ESD	03/04 05/05	US Army	Ground water	Public appraised in monthly meetings of ESD, no public objections to the ESD. MD DEP agreed with ESD changes.	Fed = N/A Contr. = N/A Est'd Savings = Minor savings
	Type of Change: From – Pump and treat; To – Monitored natural attenuation for a small area.					
	Factual Basis: There was one very small lobe of low level VOC contamination which geologically had such a low permeability, it was not practical to install extraction wells in that small area. The pump and treat system was installed for the rest of the large VOC plume.					
Region 3 Malvern TCE, PA OU 1	11/97 3/05 ROD A	05/02 3/05	PRP	Subsurface soils	PADEP review and comment throughout/public mtg.	Fed = 720 hours Contr. = N/A Est'd Savings = $14.3M
	Type of Change: From – Install cap on Main plant Area soils and for Former Disposal Area/mound area - excavate soils with off-site treatment and disposal; To – Demolition of on-site buildings, installation of cap over the Main Plant Area, installation of soil vapor extraction (SVE) and treatment system in soil area known as Former Disposal Area and removal of surficial soils impacted with PCBs.					
	Factual Basis: Significant increase in contaminated soils volume and depth identified during pre-design investigation.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 4 Savings – FY04						
Region 4 Hipps Road Landfill, FL	09/86 07/04 ESD	01/03 07/04	PRP	Ground water	State concurred, Public Notice in local paper	Fed = 50 hours Contr. = None Est'd Savings = reduced annual O&M costs by 75%
	Type of Change: From – Pump and Treat; To – Monitored Natural Attenuation					
	Type of Change: Evaluation of data from 10 years of pump and treating groundwater at the site.					
Region 4 Savannah River Site, Old F-Area Seepage Basin, SC OU 16 (OFASB)	05/97 09/04 ESD	09/01 09/04	US DOE	Ground water	State concurred, Public Notice in local newspapers	Fed = 100 hours Contr.= None Est'd Savings =None
	Type of Change: From – Ground water mixing zone in OU 16; To – Ground water mixing zone in OU 85.					
	Factual Basis: It was determined that ground water contamination was derived for sources other than the OU 16.					
Region 4 Tennessee Products, TN	09/02 08/04 ESD	03/04 08/04	PRP	Sediment (soil and debris)	State concurred, Public Notice in local paper, Community Meeting to present ESD	Fed = 100 hours Contr.= None Est'd Savings = $10.0M
	Type of Change: From – Excavation, treatment, and disposal of approximately 44,000 cy of arsenic contaminated soil and debris; To – Excavation, treatment, and disposal of approximately 116,000cy of contaminated soil and debris.					
	Factual Basis: Revised estimation of quantity of sediments to be excavated and remedy cost developed during RD/RA negotiations with PRP.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 4 USN Air Station Cecil Field, FL OU 1	09/95 11/03 ESD	06/03 11/03	USN	Surface water, sediments	One ESD covering 6 OUs was issued. State concurred, Public Notice in local newspaper.	Fed = 100 hours for 6 OUs Contr. = None Est'd Savings = None
	Type of Change: Changes to land use controls.					
	Factual Basis: Surface water and sediment contamination remains and therefore the land uses must be restricted.					
Region 4 USN Air Station Cecil Field, FL OU 2	06/96 11/03 ESD	06/03 11/03	USN	Ground water, subsurface soils	One ESD covering 6 OUs was issued. State concurred, Public Notice in local newspaper.	Fed = 100 hours for 6 OUs Contr. = None Est'd Savings = None
	Type of Change: Changes to land use controls.					
	Factual Basis: Ground water and soil contamination remains and therefore the land uses must be restricted.					
Region 4 USN Air Station Cecil Field, FL OU3	08/99 11/03 ESD	06/03 11/03	USN	Ground water	One ESD covering 6 OUs was issued. State concurred, Public Notice in local newspaper.	Fed = 100 hours for 6 OUs Contr. = None Est'd Savings = None
	Type of Change: Changes to land use controls.					
	Factual Basis: Ground water contamination remains and therefore the land uses must be restricted.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 4 USN Air Station Cecil Field, FL OU7	09/96 11/03 ESD	06/03 11/03	USN	Ground water	One ESD covering 6 OUs was issued. State concurred, Public Notice in local newspaper.	Fed = 100 hours for 6 OUs Contr. = None Est'd Savings = None
	Type of Change: Changes to land use controls.					
	Factual Basis: Ground water contamination remains and therefore the land uses must be restricted.					
Region 4 USN Air Station Cecil Field, FL OU 8	08/98 11/03 ESD	06/03 11/03	USN	Ground water	One ESD covering 6 OUs was issued. State concurred, Public Notice in local newspaper.	Fed = 100 hours for 6 OUs Contr. = None Est'd Savings = None
	Type of Change: Changes to land use controls.					
	Factual Basis: Ground water contamination remains and therefore the land uses must be restricted.					
Region 4 USN Air Station Cecil Field, FL OU 9	04/2001 11/2003 ESD	06/2003 11/2003	USN	Ground water	One ESD covering 6 OUs was issued. State concurred, Public Notice in local newspaper.	Fed = 100 hours for 6 OUs Contr. = None Est'd Savings = None
	Type of Change: Changes to land use controls.					
	Factual Basis: Ground water contamination remains and therefore the land uses must be restricted.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 4 Savings – FY 05						
Region 4 Carolina Transformer Company, NC OU1	8/91 7/05 ROD-A	5/04 7/05	EPA	Ground water	State concurrence and Public Comment Period	Fed = 300 hours Contr. = None Est'd Savings = $1.9M
	Type of Change: From – Groundwater pump and treat; To – Monitored natural attenuation					
	Type of Change: New data collected during implementation of source removal and development of the Remedial Design					
Region 4 Coleman-Evans Wood Preserving Company, FL OU1	9/86 9/05 ESD	1/05 9/05	EPA	Ground water	State concurred, Public Notice in local newspaper	Fed = 40 hours Contr.= None Est'd Savings = $2.5M
	Type of Change: From – Groundwater pump and treat; To – Monitored natural attenuation					
	Factual Basis: During phase one of remedy implementation, collected approximately 76 million gallons of groundwater. Based on testing results conducted during the development of an addendum to the Remedial Design, it was determined that additional pump and treatment is not needed.					
Region 4 FCX, Inc. (Washington Pant), NC OU2	12/96 9/05 ROD-A	1/05 9/05	EPA	Ground water	State concurrence, Public Comment period	Fed = 40 hours Contr. = None Est'd Savings = $21.0M
	Type of Change: From – Groundwater pump and treat; To – Monitored natural attenuation					
	Factual Basis: Monitored natural attenuation was evaluated during the development of the Remedial Design.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 4 Helena Chemical Company, FL OU1	5/96 1/05 ESD	10/04 1/05	EPA	Ground water	State concurrence, Public Notice a local newspaper	Fed = 40 hours Contr.= None Est'd Savings = $1.0M
	Type of Change: Changed ROD cleanup number for xylene From – 20 ppb; To – 10,000 ppb					
	Factual Basis: Corrected technical error in ROD cleanup number for xylene. Number should always have been 10,000 ppb.					
Region 4 USN Marine Corps Logistics Base, GA OU6	9/01 8/05 ESD	1/05 8/05	US Navy	Contaminated soils and ground water	State and EPA concurrence and Public Notice in local newspaper	Fed = 50 hours Contr. = None Est'd Savings = None
	Type of Change: From – Clay capping contaminated soils and groundwater in situ enhanced bioremediation; To – Evapotranspiration cover over contaminated soil and groundwater in situ abiotic treatment.					
	Factual Basis: Data collected during development of the Remedial Design.					
Region 4 USDOE Oak Ridge Reservation, TN OU29 (Milton Valley Area)	9/00 11/04 ROD-A	11/03 11/04	DOE	Buried waste and contaminated soil	State and EPA concurrence and Public Notice / public comment period	Fed = 100 hours Contr. = None Est'd Savings = $41.0M
	Type of Change: Form – In situ vitrification treatment; To – In situ grouting.					
	Factual Basis: Information gathered during Remedial Design.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 4 Peak Oil Company / Bay Drum Company, FL OU2	8/93 1/05 ROD-A	1994 1/05	PRP	Ground water	State concurrence public notice public comment period	Fed = 100 hours Contr. = None Est'd `Savings = $9.0M
	Type of Change: From – Pump and treat with air stripping; To – Enhanced in-situ bioremediation and air sparging with source treatment, monitored natural attenuation, and institutional controls**.**					
	Factual Basis: New hydrogeologic data collected during Remedial Design.					
Region 4 USDOE Savannah River Site, SC OU13	3/97 7/05 ESD	5/03 6/03	DOE	Ground water	State concurred, Public Notice in local newspapers	Fed = 100 hours Contr. = None Est'd Savings = None
	Type of Change: From – Ground water monitoring; To – Terminated ground water monitoring.					
	Factual Basis: Monitoring reports demonstrate that remedial goals for groundwater reached.					
Region 4 USDOE Savannah River Site, SC OU 21, 29	12/03 8/05 ESD	12/02 01/03	DOE	Contaminated Soils	State concurred, Public Notice in local newspapers	Fed = 100 hours Contr. = 40 hours Est'd Savings = None
	Type of Change: From – Remedial goal for principle threat source material (PTSM) of 21.75 pCi/g for radium 228 and 23.44 pCi/g for thorium at the old TNX Seepage Basin (OTSB) and the Inactive Process Sewer Line (IPSL); To - Reduced remedial goal to 94 pCi/g for radium 228 plus daughter products and for thorium plus daughter products at the OTSB, IPSLs, and sumps at area 678-T.					
	Factual Basis: Significant changes in the calculation methods and toxicity values for determining risk to the future industrial worker since preparation of the ROD. Presented volumes of material to be removed should be re-evaluated. Decontamination and decommissioning of facilities occurred following (9/05) approval of the ROD allowing access to sumps with potential PTSM. It is preferred to remove all PTSM. Increase the scope of treatment/remediation to include: (1) the New TNX Seepage Basin (NTSB)/IPSL; (2) the TNX Burying Ground (TBG)/Vadose Zone; (3) Old TNX Seepage Basin OTSB/IPSL/Discharge Gully (DG); and (4) the TNX Groundwater.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 5 Savings – FY 04						
Region 5 American Chemical Service, Inc, IN	09/92 07/99 ROD-A 09/04 ESD	2001 2004	PRP, EPA	Ground water	State reviewed and commented	Fed = 60 hours Contr. = None Est'd Savings = None
	Type of Change: From – Ground water pump-and-treat, containment with treatment and potential in situ cleanup methods; To – Application of chemical oxidant to source area and monitored natural attenuation afterwards.					
	Factual Basis: The 1992 ROD called for complete cleanup of the site to residential standards, including groundwater pump-and-treat for the contaminant plumes. The 1999 ROD amendment changed the remedy to containment with treatment and referred to potential *in situ* cleanup methods for addressing groundwater. The ESD documents the selection of the application of a chemical oxidant to the source area and monitored natural attentuation after the chem-ox application as referred to in the 1999 ROD amendment.					
Region 5 Cross Brothers Pail Recycling (Pembroke), IL	03/85 09/04 ESD	06/04 09/04	EPA	Ground water	IEPA, Ohio EPA	Fed = 80 hours Contr. = None Est'd Savings = None
	Type of Change: From – Residual risk of 1x 10^{-4}; To – Revised residual risk level to 1 x 10^{-5}.					
	Factual Basis: During the remedial design process, EPA staff indicated that it would be acceptable to design the ground water system to meet MCLs, with the cumulative residual risk evaluation to be considered for only those contaminants that do not have MCLs. The 2004 ESD formalized this change. In addition, the land use restrictions discussed within the 1989 ROD were vague and needed clarification.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 5 Feed Materials Production Center (USDOE), OH OU1	01/95 11/03 ROD-A	08/03 11/03	US DOE	Soils	OEPA and Citizen involvement. State concurred.	Fed = 40 hours Contr. = None Est'd Savings = $4.5M
	Type of Change: From – Removal, treatment, and off-site disposal at a permitted commercial disposal facility, placement of backfill into excavations and construction of cover system; To – Higher soil cleanup level for one contaminant, permanent disposal of pit soils at Fernald's On-site Disposal Facility, re-grading, re-seeding and re-vegetation – no cover system necessary.					
	Factual Basis: New site information led to the higher cleanup level, new studies showed the pit soils were safe for on-site disposal,					
Region 5 Feed Materials Production Center (USDOE), OH OU4	03/05 11/03 ESD	12/94 11/03	US DOE	Source material	OEPA, citizen involvement. State concurred.	Fed = 40 hours Contr. = None Est'd Savings = $0.4M
	Type of Change: From – Off-site disposal at the Nevada Test Site (NTS); To – Disposal at another appropriately permitted commercial disposal facility.					
	Factual Basis: DOE and U.S. EPA have received new information concerning (1) the waste acceptance criteria for the NTS disposal facility, and (2) the potential availability of other commercial facilities that can accept the residues for disposal as byproduct materials.					
Region 5 Himco Dump, IN	09/93 09/04 ROD-A	1995 09/04	EPA	Ground water, soil, soil gas	IDEM concurrence	Fed = 240 hours Contr. = None Est'd Savings = $11.0M
	Type of Change: From – Composite cap and fence alignments; To – No composite cap, extension of local municipal supply with additional ground water monitoring.					
	Factual Basis: Based on new ground water data, and pending the site does not deteriorate further, it is not necessary to construct the composite cap. The requirement for the extension of the local municipal supply to 39 residents with additional ground water monitoring was emplaced to resolve uncertainties about the risk to human health and the environment.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 5 LaSalle Electrical Utilities, IL	1988 07/04 ESD	06/04 07/04	IEPA	Ground water	IEPA	Fed = 60 hours Contr. = None Est'd Savings = None
	Type of Change: From – Ground water pump-and-treat system with water released to the POTW; To – Installation of two phytoremediation plots, with some of the water from the pump and treat to be re-directed for irrigation of plots.					
	Factual Basis: The ROD required the installation of a ground water pump and treat system to remediate the ground water to drinking water standards (i.e. MCLs). Treated ground water was to be discharged to the local POTW. The ESD recognizes the implementation of two phyto-remediation plots as a remedy enhancement with the significant difference being that portions of the treated ground water would be re-directed and utilized for irrigation of the of the phyto-remediation plots instead of being discharged to the POTW.					
Region 5 Midco I, IN	06/89 09/04 ESD	10/02 09/04	Midco Remedial Corp (PRP)	Soil	IDEM	Fed = 227 hours Contr. = $20,000 Est'd Savings = $2.0M
	Type of Change: From – Soil vapor extraction (SVE) treatment of 7,800 cubic yards of soil from below the water table; To – Soil/bentonite ground water barrier wall, lowering of the water table by 12 feet, SVE treatment of 54,200 cubic yards of soil from above and below the water table.					
	Factual Basis: The ROD required soil treatment by in-situ solidification/stabilization (S/S) and soil vapor extraction (SVE). The estimated quantity of soil treatment by solidification/stabilization was reduced from 12,400 cubic yards in the ROD, to 7,800 in the ROD Amendment, and to 3,560 in the ESD. In addition, the ESD allows excavation and off-site disposal as an alternative to treatment by solidification/stabilization. To compensate for this, the ESD provides for more comprehensive soil treatment by soil vapor extraction. While the ROD required only very limited soil treatment below the water table, the ESD requires SVE treatment both above and below the water table. To accomplish this, a soil/bentonite groundwater barrier wall was installed around the Site, and groundwater within the barrier wall is being pumped to lower the water table by 12 feet before conducting soil vapor extraction treatment. This increases the volume of soil treatment by SVE from the estimated 12,400 cubic yards estimated in the ROD and 7,800 in the ROD Amendment to 54,200 cubic yards.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 5 Midco II, IN	06/89 09/04 ESD	2002 02/03	Midco Remedial Corp (PRP)	Soil	IDEM	Fed = 151 hours Contr. = $0.2M Est'd Savings = $5.8M
	Type of Change: From – Soil vapor extraction (SVE), In situ solidification/stabilization (S/S); To – Air sparging in conjunction with the SVE operation; replace in-situ S/S with treatment in conjunction with the SVE and air sparging treatment, change soil remediation requirements for soil contaminated with metals and cyanide, and change the point of application of an air emission control requirement.					
	Factual Basis: Further studies done by the PRP.					
Region 5 Tar Lake, MI	09/92 09/04 ESD	02/04 09/04	EPA	Soil	MDEQ	Fed = 40 hours Contr. = None Est'd Savings = $2.6M
	Type of Change: From – In-situ treatment of PAH contaminated soils with bioventing and ground water circulation; To – Off-site treatment of soil.					
	Factual Basis: Additional data instigated using ROD-Amendment remedy.					
Region 5 US Aviex, MI	09/88 09/93 ESD 09/04 ROD-A	03/04 09/04	EPA	Ground water	MDEQ	Fed = 80 hours Contr. = None Est'd Savings = $2.0M
	Type of Change: From – Pump and treat; To – Monitored natural attenuation.					
	Factual Basis: The in-situ oxidization of residual on-site contamination is an enhancement to the new MNA remedy.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 5 Savings – FY 05						
Region 5 Central Illinois Public Service Co., IL	09/92 09/05 ESD	2005 09/05	PRPs	Ground water	State reviewed and concurred	Fed = 80 hours Contr. = None Est'd Savings = N/A
	Type of Change: From – Pump and treat; To – Conducting a pilot study on an alternate treatment method. Revised the clean-up objectives for benzo(a)pyrene. Updated clean-up objectives related to surface water quality standards for the other contaminants of concern.					
	Factual Basis: Attempting to reduce or eliminate the length of operation time of the current ground water system. A new Maximum Contaminant Level (MCL) has been recently established for benzo(a)pyrene. New toxicity information about the other COCs.					
Region 5 Continental Steel Corp., IN	09/98 09/05 ESD	07/05 08/05	IDEM, Region 5	Soil, ground water and sediments	State and community concurrence	Fed = 80 hours Contr. = None Est'd Savings = $16.0M
	Type of Change: From – Excavation of contaminated soils and disposal in on-site landfill; To – Disposal of creek and quarry pond sediments off-site, treatment of contaminated soils in-situ, elimination of landfill requirement, and reinforced/clearer institutional controls.					
	Factual Basis: The 9/05 ESD highlights include 1) disposing creek and quarry pond sediments off-site, 2) eliminating requirement for an on-site landfill at the Lagoon Area, 3) treating the Main Plant contaminated soils in-situ, instead of excavating and disposing it to the planned landfill in the Lagoon Area, and 4) reinforcing and making clearer the institutional controls at the site.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 5 K&L Avenue Landfill, MI	09/90 09/05 ROD-A	2004 9/05	EPA	Ground water	Township and Community are opposed to capping landfill, but in favor of MNA. State withheld concurrence on ROD-A until more data gathered	Fed = 200 hours Contr. = None Est'd Savings = $23.0M
	Type of Change: From – Pump and treat remedy for the entire plume; To – MNA and changes to the design requirements for the landfill cap to allow the use of a GCL in place of 2 feet of clay.					
	Factual Basis: Additional studies of MNA conducted by the PRP showed that natural attenuation is controlling the ground water plume, and that MNA is a more cost-effective remedy for the site.					

Region 6 Savings – FY 04						
Region 6 Oklahoma Refining Co., OK	06/92 10/03 ESD	07/97 09/04	EPA and ODEQ	Ground water, soils, source materials	Both were involved in reviewing the ESD. EPA conducted an open house meeting on 1/22/02	Fed = 100 hours Contr. = None Est'd Savings = $0.8M
	Type of Change: From – Remediate the LNAPL plume under its process area, remediate railroad areas, place asphaltic and pitch wastes in an on-site landfill, stabilize approximately 7,200 cubic yards of metals-contaminated waste from the AP-1 area, 1.5 mg/L TCLP for lead, stabilize soils to reduce the direct contact hazard, remediate tank #1 area; To – Postpone the LNAPL trench ground water remedy, no remedial action needed for the railroad areas, asphaltic and pitch wastes disposal at a permitted landfill facility, deposit treated waste from the AP-1 area in the Site Hazardous Waste Landfill without additional stabilization treatment, 5.0 mg/L TCLP for lead, stabilize soils to increase protection from ground water contamination, higher RAO level for beryllium in soil, cover tank #1 area without remediation.					
	Factual Basis: Review of Site documents including the RI, the FS, the ROD, new sampling data, and experience gained during the implementation of the Remedial Action showed that revisions to the ROD were necessary					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 6 Ruston Foundry, LA	06/02 09/04 ESD	02/04 09/04	City/ Community	Soil/sediments	Newspaper Notice, Open House with comment period	Fed = 160-200 hours Contr. = None Est'd Savings = $0.3M
	Type of Change: From – Recreational reuse, 15,000 cubic yards of soil/sediment waste, stabilization; To – Industrial reuse, 1,766 cubic yards of soil/sediment waste, excavation and off-site disposal.					
	Factual Basis: New information was received from the city and the community during a meeting held regarding future Site reuse and from the PRP during negotiations regarding slag stabilization.					

Region 6 Savings – FY 05						
Region 6 Tar Creek, OK OU2	08/97 09/05 ESD	03/05 07/05	1)Change in Costs for Remedy; 2)Need for 5-Year Reviews; 3)Change in depth of excavation	Soil	State concurs with ESD Not yet released to public	Fed. = 150 LOE hours Contr. = None Est'd Savings = $0.1M Although the ESD generated minimal savings, it documents the cost increases of the project from $29M to $125M. This was due to many more properties remediated than originally projected and an increase in documentation and drainage work for each property. This was not the purpose of this ESD.
	Type of Change: From – Depth of excavation on residential properties set at 18 inches; To – Depth set at a maximum of 12 inches.					
	Factual Basis: Depth of excavation is based on new guidance (Residential Lead Workgroup). 5-Year Reviews now needed given that waste material deeper than 12 or 18 inches will be left on-site.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 7 Savings – FY 04						
Region 7 Solid State Circuits, MO	09/89 09/04 ESD	09/96 09/04	RPM	Ground water	State Lead Enforcement	Fed = None Contr. = None Est'd Savings = Unknown – PRP Lead, costs unavailable
	Type of Change: From – Extraction of contaminated ground water by new and existing wells, on-site treatment using two air strippers, discharge treated water to the city sewer system, and a city ordinance to prevent construction of drinking wells in or near the contaminated ground water plumes; To – Installation of a horizontal, injection well for the treated water from the ground water treatment facility.					
	Factual Basis: Results of first five-year review and evaluation of innovative technologies for TCE in ground water.					
Region 7 Savings – FY 05						
Region 7 Bruno Co-Op Association/Associated Properties, NE	09/98 09/05 ESD	06/2005 09/2005	EPA	Groundwater	PRP-lead cleanup EPA-lead for ICs under ESD	Fed = Insignificant Contr. = N/A Est'd Savings = None
	Type of Change: From – The original ROD and first ESD did not include groundwater institutional controls as a component of the groundwater pump and treat remedy that is fully operational; To – the second ESD addresses institutional controls to augment the operating pump and treat remedy. The new requirements will control or prohibit the drilling, construction, and use of new domestic wells within the boundaries of the plume and also control or prohibit the placement of new irrigation or industrial wells that may hydraulically influence the operation of the pump and treat system.					
	Factual Basis: Completion of the Preliminary Close-out Report (PCOR) identified the need for the addition of groundwater institutional controls at the site. The second ESD fulfilled this need.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 7 Peoples Natural Gas Co., IA	09/91 12/04 ESD	03/04 12/04	PRP	GW	State approved ARAR change	Fed = None Contr. = None Est'd Savings = None
	Type of Change: From – Change in GW action levels for benzene and naphthalene.					
	Factual Basis: State approved change in state ARAR for benzene to MCL and naphthalene to revised health advisory limit.					
Region 7 Pester Refinery Co., KS	09/92 06/05 ROD-A	09/04 06/05	PRP	Soil, ground water	State Lead Enforcement	Fed = None Contr. = None Est'd Savings = None
	Type of Change: From – In-situ bioremediation and soil flushing; To – Solidification.					
	Factual Basis: Results of five year review and treatability study.					
Region 7 Waverly Ground Water Contamination, NE	09/90 03/05 ESD	10/04 03/05	EPA	Ground water	State Concurrence and 30 day public comment period. No adverse comments received.	Fed = N/A Contr. = PRP/USDA Est'd Savings = None
	Type of Change: From – ROD compliance criterion level for soil gas; To – Deletion of the compliance criterion for soil gas.					
	Factual Basis: Results of the third Five-Year Review and the re-evaluation of the ROD soil gas compliance criterion by utilizing the current "Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils", 2002.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 7 Weldon Spring Quarry/Plant/Pits (USDOE/ARMY), MO	09/93 02/05 ESD	11/04 02/05	EPA	Ground water, soil	Yes/state review/citizens commission/public mtg.	Fed = N/A Contr. = N/A Est'd Savings = None
	Type of Change: Clarified old decisions that were vague and/or incomplete with respect to necessary land and resource use restrictions.					
	Factual Basis: Consistency with EPA guidance and IC implementation strategy.					

Region 8 Savings – FY 04						
Region 8 California Gulch Site, CO OU 4	03/98 03/04 ESD	01/04 03/04	Joint - EPA/State Historic Preservation Office	Fluvial tailing	Meeting in May 1999 to discuss alternatives to selected remedy among EPA, CDPHE, SHPO, and other interested parties. Notice of ESD published in local newspaper. CDPHE supported ESD.	Fed = None Contr.= None Est'd Savings = None
	Type of Change: From – Consolidation and capping of a fluvial tailing deposit in the vicinity of historic Oro City; To – Contaminant loading to surface water from this fluvial tailing deposit is uncertain, so this response action was removed from the record of decision to preserve the cultural resource.					
	Factual Basis: The area will continue to be monitored. If it is determined that there is unacceptable loading of contaminants to surface water from this deposit, the remedy will be re-evaluated under a separate operable unit which focuses on site-wide water quality.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 8 Savings – FY 05						
Region 8 Lowry Landfill, CO	03/94 08/05 ESD	06/02 12/04	PRPs	Soil	Public Concurred	Fed = None Contr. = None Est'd Savings = $12.3M
	Type of Change: From – Excavation, removal, and on-Site treatment of surface and subsurface drums, contaminated soils, and waste pits and reclamation; To – Extraction of NAPL using either top-loading or bottom-loading pumps installed in existing wells, onsite temporary storage of extracted liquids, transportation and offsite treatment and disposal of extracted liquids, maintenance of the existing cap on each waste pit and ground water monitoring downgradient.					
	Factual Basis: Pilot study was conducted to evaluate alternative treatment technology leading to significant new information.					
Region 9 Savings – FY 04						
Region 9 Camp Pendleton Marine Corps Base, CA	12/95 09/04 ESD	2003 09/04	DoD	Ground water	State involved. Little to no community interest	Fed. = 53 hours Contr. = None Est'd Savings =$0.6M
	Type of Change: From – Ground water will be sampled and analyzed semiannually for 10 years to verify that dispersion and natural attenuation are occurring; To – Eliminate GW O&M 2.5 years early.					
	Factual Basis: Site was determined to be source of contamination. New investigation initiated and old site closed.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of <u>Original ROD</u>** **Date of Change (ESD/ROD-A)**	**Date Review <u>Commenced</u>** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource <u>Demands – Fed/Contr.</u>** **Est'd Cost Savings**
Region 9 Fort Ord, CA OU3	01/97 12/03 ESD	2001 12/03	DoD	Soil	State involved, community concern also prompted change	Fed. = 80 hours Contr. = None Est'd Savings =$1.0M
	Type of Change: From **–** Soil excavation and disposal in landfill, ongoing ground water remediation; To – Sifting to remove spent bullets from soils.					
	Factual Basis: Realized there would be cost savings and a recycling opportunity.					
Region 9 Indian Bend Wash Area, AZ	09/98 06/04 ROD-A	2003 06/04	EPA	Ground water	The state concurs with the remedy selected in this ROD Amendment	Fed = 650 hours Contr = 100 LOE hours Est'd Savings =$3.0M
	Type of Change: From – Pump and treat; To- MNA.					
	Factual Basis: At the time of the 1998 GW ROD, EPA did not have adequate data for the western plume to demonstrate that contaminant levels were decreasing, natural attenuation was occurring, and that cleanup standards could be met within a reasonable time frame. Since that time, EPA has gathered a significant amount of ground water data for the western plume, and an evaluation of the data shows that the western plume is not migrating and is attenuating at a rate that exceeds its lateral movement. Therefore, the plume is relatively stable. The current data indicate that the MNA remedy will meet cleanup standards in approximately four to five years.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 9 Nineteenth Avenue Landfill, AZ	09/98 10/03 ESD	2003 10/03	Arizona Department of Env. Quality (ADEQ)	Ground water, air	State lead site. Add was taken out in paper announcing the availability of the ESD	Fed = 15-20 hours Contr. = None Est'd Savings = None
	Type of Change: Updated ARARs for ground water monitoring and ambient air guidelines.					
	Factual Basis: ADEQ has determined that the currently-established ground water ARARs for the site are no longer the most protective of human health and the environment, and therefore require modifications.					
Region 9 Tracy Defense Depot, CA	04/98 06/04 ROD-A	2003 06/04	DoD	Soil, ground water	State involved. Little to no community interest	Fed. = None Contr. = 88 hours Est'd Savings =$0.5M
	Type of Change: From – Excavation and offsite disposal of soils; To – Reevaluation of risk, no action req'd after all for soil.					
	Factual Basis: The following were considered in amending this ROD: existing and ongoing operations at DDJC – Tracy, new information developed since the signing of the original ROD, and changes proposed for the remedial alternatives					

Region 9 Savings – FY 05						
Region 9 Apache Powder Co., AZ	09/94 09/05 ROD-A	01/00 09/05	EPA	GW & Soils	Public meeting and 30 day public comment period	Fed = 2500 hours Contr. = $0.2M Est'd Savings =$1.6M
	Type of Change: From – (GW) Treatment of nitrate through constructed wetlands and pump & treat; (Soils) Implementation of remedy for formerly active ponds; To – (GW) Treat both nitrate and perchlorate through monitored natural attenuation; (Soils) Implementing consistent soil remedies selected under Superfund for inactive ponds.					
	Factual Basis: New soils data and the discovery of perchlorate in Southern Area ground water and soils.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 9 Fort Ord, CA OU8	07/02 4/05 ESD	03/05 04/05	DoD	Munitions and Explosives of Concern (MEC) (note: its a no action remedy but is no action for MEC)	Yes	Fed = 40 hours Contr. = None Est'd Savings = None
	Type of Change: From – Track 0 sites are sites that contain no MEC, To – Track 0 sites are sites that contain no MEC or munitions found are incidental. Is important for plug-in of future sites.					
	Factual Basis: The ESD expands the scope of what sites can be considered Track 0 and expands the scope of the Track 0 plug-in process to allow sites similar to those included in the ROD to be considered as candidates for Track 0 no action determinations.					
Region 9 Mather Air Force Base (AC&W Disposal Site), CA	1998 10/04 ESD	2002 10/04	U.S. Air Force	Soil	EPA and the State of California concur with the ESD with comments. These comments were addressed by the Air Force.	Fed =12 hours Contr. = N/A Est'd Savings =$0.1M
	Type of Change: From – Excavation of lead-contaminated soils under removal authority and in-situ treatment of fuel-contaminated soils; To- Deeper soil extraction and off-site disposal.					
	Factual Basis: Additional soil investigation in 2002.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 9 McColl, CA OU4	5/96 9/05	7/05 9/05	EPA Five-year review	Ground water	CA/Dept. of Toxic Substances Control concurred on the ESD. EPA issued a fact sheet. Inquiries were received from a couple of newspapers and EPA responded.	Fed = 80 hours Contr. = None Est'd Savings = None
	Type of Change: From – Use of tetrahyrdrothiophenes as the chemical constituent measured as a trigger for further response actions; To – Use of benzene as a trigger for further response actions.					
	Factual Basis: During the Five Year Review it was determined that tetrahydrothiophenes may not be the best chemical constituent to measure to evaluate the movement of groundwater contaminants. Subsequent to the Five Year Review further analysis of the issue was conducted by the McColl Site Group (PRPs). Upon reviewing the further analysis EPA decided to proceed with the ESD.					
Region 9 Selma Treating Co., CA OU1	09/88 08/05 ESD	03/05 08/05	EPA	GW	Public notice placed in newspaper	Fed = 60 hours Contr. = $10,000 Est'd Savings =$29.6M
	Type of Change: From – Pump and treat; To – Groundwater in situ bioremediation and groundwater extraction system/groundwater treatment plant enhancement.					
	Factual Basis: EPA recalibrated the site groundwater model to evaluate the effectiveness of plume containment and recovery. This study indicated that 30 years of pumping under current well configuration would not be sufficient to completely mitigate the groundwater contamination at the site.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 10 Savings – FY 04						
Region 10 Idaho National Engineering Lab (USDOE), ID OU 7	10/99 02/04 ESD	09/03 02/04	DOE	Ground water	The State reviewed and commented on ESD. Notice in local papers regarding the ESD.	Fed = None Contr. = None Est'd Savings = None
	Type of Change: From – ICs, GW monitoring, Pump and treat if necessary; To – No Action for some portions/sites within the OU, additional GW monitoring in some areas that could prompt the need for additional sampling and well installation, followed by fate and transport models. Pump and Treat would stay the same if triggered by sampling data.					
	Factual Basis: Additional analytical data from monitoring of the Snake River Plain Aquifer have been obtained since the OU 7 ROD was issued.					
Region 10 Idaho National Engineering Lab (USDOE), ID OU 21	09/98 06/04 ESD	01/98 06/04	DOE	Surface water	The State reviewed and commented on ESD. Notice in local papers regarding the ESD	Fed = Unable to determine Contr. = None Est'd Savings = None
	Type of Change:: From – Phytoremediation; To – This ESD implements the contingent remedy of Excavation and Disposal for three sites, contaminated soils will be excavated and disposed of using appropriate landfills.					
	Factual Basis: Experience with phytoremediation at similarly contaminated nearby sites over a period of four years has shown that the Industrial Waste Pond contaminants will be more resistant to phytoremediation than estimated. Therefore more than seven years would be required to achieve the remediation goals. In addition, a new project may restart the sodium processing activities and refill the Industrial Waste Pond with cooling water. The resulting accumulation of water in the pond would preclude the use of phytoremediation. Because it would take over seven years to complete phytoremediation and meet the Remediation Goals at the Industrial Waste Pond, and because the selected remedy would conflict with the potential need to reuse the pond, the selected phytoremediation remedy is no longer considered to be viable.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 10 Mountain Home Air Force Base, ID OU3	10/95 03/04 ESD	06/00 03/04	EPA	Ground water	The state agreed to the changes, and the community was made aware through the Restoration Advisory Board (RAB).	Fed = None Contr. = None Est'd Savings = None
	Type of Change: From – Limited action, ICs; To – Enhanced ICs, the ESD incorporated additional requirements and specificity in existing IC remedy for ST-11, a fuel spill site under the AFB flightline.					
	Factual Basis: Since the ROD was issued in 1995, the Air Force has clarified their requirements for ICs.					

Region 10 Savings – FY 05						
Region 10 Idaho National Engineering Laboratory (USDOE), ID OU 3	11/99 01/05 ESD	11/04 01/05	EPA	Tank contents and Soil	State reviewed and comments on ESD. Notice to public in local papers	Fed = Can't be determined Contr. = None Est'd Savings = $10.0M
	Type of Change: From – Ex situ treatment of tank contents off INL; To – Ex situ treatment of tank contents on INL.					
	Factual Basis: Off INL treatment system was unavailable and would remain unavailable for the foreseeable future. A treatment system for similar waste stream was surplused at Oak Ridge Lab. Testing found it could treat the waste in some of the tanks. Shipped to INL and reassemble. Other tank waste was dry and was addressed via air sparging at the disposal site on INL.					

Summary of Remedy Update Information for FY04 and FY05 for Sites Without Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Savings**
Region 10 Idaho National Engineering Laboratory (USDOE), ID OU 11	01/00 01/05 ESD	06/04 01/05	EPA	Tank contents	State reviewed and comments on ESD. Notice to public in local papers	Fed = Can't be determined Contr. = None Est'd Savings = $0.3M
	Type of Change: From – Ex situ treatment of tank contents off INL; To – Ex situ treatment of tank contents on INL.					
	Factual Basis: Off INL treatment system was unavailable and would remain unavailable for the foreseeable future. Similar tank waste was being treated on site. So tank wastes were combined.					
Region 10 Port Hadlock Detachment (USNAVY), WA	08/95 11/04 ESD	05/04 11/04	EPA	Groundwater and soil	State and community involvement	Fed = Unknown Contr. = None Est'd Savings = None
	Type of Change: Add institutional controls.					
	Factual Basis: Not applicable.					

Appendix A.2:

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Note: The information and data presented in Appendix A.2 represent only a portion of the information available in the decision document. If more information is needed, please refer to the site's Explanation of Significant Differences (ESD), ROD-Amendment (ROD-A), memo-to-file, or letter.

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 1 Increases – FY 04						
Region 1 Fort Devens, MA	09/01 03/04 ESD	01/02 03/04	USACE	Soil, ground water	State concurrence and public notice	Fed =100 hours Contr. = 25 hours Est'd Increase = $0.6M
	Type of Change: Increased volume of contaminated soil requiring removal, inclusion of Extractable Petroleum Hydrocarbons (EPH) as contaminant of concern in soils, inclusion of EPH and PCBs as contaminants of concern for ground water.					
	Factual Basis: Data collected and observations made during the contaminated soil removal action initiated in January 2002.					
Region 1 Pease Air Force Base, NH	09/95 12/03 ROD-A	06/02 12/03	USAF	Ground water	Yes	Fed = $0.1M Contr. = $0.1M Est'd Increase = $6.9M
	Type of Change: From – Removal of contaminated soil that posed a leaching threat to underlying groundwater, source area groundwater extraction to reduce contaminant mass and to prevent the migration of plumes, and institutional controls to prevent human exposure to contaminated groundwater.; To – Construction of a contingency wellhead treatment system for the Haven well, optimization of the Site 39 source area groundwater extraction system with MNA of the down-gradient plume, termination of groundwater extraction southwest of Sites 34 and 39, modification of the Zone 3 long-term monitoring program to measure the performance of the amended remedy, ongoing treatment of Site 49 and Site 73 source area ground water contamination with permeable reactive barriers (PRBs), implementation of land use controls in Zone 3 and at Site 49, five-year reviews, no further action at Site 65.					
	Factual Basis: Since the Zone 3 remedy was implemented in 1995, long-term monitoring data have been collected to assess the progress towards restoration of the overburden and bedrock aquifers. On-going evaluations of remedy performance indicate that while the existing remedy is currently protective of human health and the environment, the long-term effectiveness of the remedy is uncertain.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 1 Increases – FY 05						
Region 1 Baird & McGuire, MA	09/86 04/05 ESD	2004 2005	EPA	Soil, ground water	State concurrence	Fed = 160 hours Contr. = None Est'd Increase = Minimal
	Type of Change: Added requirement for institutional controls.					
	Factual Basis: No ICs were included in the original ROD.					
Region 1 Fort Devens, MA	09/95 07/05 ESD	12/04 07/05	Army	Ground water	Yes- Public Meeting	Fed = 200 hours Contr. =100 hours Est'd Increase = $3.5M
	Type of Change: From – Extraction system; To – Treatment after extraction and discharge to Devens Privately-Owned Treatment Works.					
	Factual Basis: The Army felt it was necessary to implement the contingency remedy.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 2 Increases – FY 04						
Region 2 Genzale Plating, NY	03/91 07/04 ESD	05/03 07/04	EPA	Soil	Full State involvement; community expressed no opinion.	Fed = N/A Contr.= N/A Est'd Increase = $2.7M
	Type of Change: From – Treatment of contaminated soils by soil vapor extraction (SVE) for organics contamination, followed by excavation and off-site treatment of soils for metals contamination; To – Tank excavation, removal of the process building, additional excavation and offsite disposal of metals-contaminated soils.					
	Factual Basis: In May 2003, during the demolition of the former process building, EPA observed a surface expression, which was determined to be a pipe to a buried tank previously considered an abandoned well. The recalcitrant subsurface contamination observed at the site was in the immediate vicinity of this buried tank.					
Region 2 Grand St. Mercury, NJ	09/97 07/04 ESD	10/03 07/04	EPA	Soil	Yes	Fed = 30 hours Contr. = None Est'd Increase = $1.4M
	Type of Change: From – Permanent relocation of residents from the site; demolition of the two contaminated buildings; sampling, excavation, and off-site disposal of contaminated soil at EPA-approved facilities; To – Additional excavation and off-site disposal of subsurface soils at the site located below the water table, having an average mercury concentration of 520 ppm, which could pose a potential risk to an on-site utility worker.					
	Factual Basis: EPA's risk based remediation goal specific to utility workers and construction workers for saturated soils at the site. Modified remedy remains protective in removing soils that could pose a potential health risk due to the presence of elevated mercury concentrations to current or future land owners or occupants. Removal of these "hot spot" saturated soils was not anticipated at the time of the writing of the ROD. The modified remedy establishes a remediation goal appropriate for subsurface soils while remaining protective.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 2 Nascolite Corporation Superfund Site, NJ OU 2	06/91 09/04 ESD	10/00 08/02	EPA	Soil	The state supported EPA's revision to the remedy and decision to issue the ESD. EPA announced the availability of the ESD in *The Daily Journal* of Vineland, NJ. ESD was placed in the Administrative Record for the site.	Fed = 160 hours Contr. = 4.5 hours Est'd Increase = $14.0M
	Type of Change: From – Excavation and solidification/stabilization of unsaturated and wetlands soils contaminated above cleanup standards, with replacement of solidified soils on the site; To – Soil contaminated with methyl methacrylate was excavated and sent off site for treatment and/or disposal.					
	Factual Basis: The soils were found to be significantly contaminated with methyl methacrylate and a greater quantity of VOCs then estimated. The effectiveness of the ROD's soil remedy would have been uncertain.					
Region 2 W.R. Grace/Wayne Interim Storage Site, NJ	05/00 12/03 ESD	05/03 06/03	US ACE	Soil	NJ DEP provided with opportunity to review documents.	Fed = 160 hours Contr.= 4.5 hours Est'd Increase = $1.5M
	Type of Change: No change in selected remedy; ESD extended area of soil excavation to include a vicinity property which had been partially remediated previously.					
	Factual Basis: Evaluation of selected ROD criteria for unrestricted release against work performed through an earlier removal indicated the need for additional excavation in limited portions of a vicinity property to be consistent with ROD criteria.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 2 Increases – FY 05						
Region 2 Bog Creek Farm, NJ OU 1	09/85 01/05 ESD	03/03 12/03	EPA	Soil	Yes	Fed = 100 hours Contr. = $0.3M Est'd Increase = $5.3M
	Type of Change: Additional soil excavation is required.					
	Factual Basis: Five years into the long term remedial action it became apparent that the excavation under the 1985 ROD left many undetected "hot spots" on the site. These areas are sources of ground water contamination and would result in the pump and treat system having to operate for many decades. EPA further characterized the remaining soil "hot spot" contamination which led to the ESD for additional soil excavation.					
Region 2 Bog Creek Farm, NJ OU 2	06/89 09/05 ROD-A	3/03 09/05	EPA	Ground water	Yes	Fed = 320 hours Contr. =$0.5M Est'd Increase = $2.7M
	Type of Change: From – Pump and treat; To – Optimization of the ground water pump and treat system and excavation of recently characterized contaminated soils remaining at the site.					
	Factual Basis: Further study indicated contaminated soils still remained at the site.					
Region 2 Brookhaven National Laboratory (USDOE), NY	06/00 05/05 ESD	05/03 05/05	EPA	Ground water	Yes	Fed = N/A Contr. = N/A Est'd Increase = $7.5M
	Type of Change: From – Ground water treatment system; To – Installation of additional wells and additional time to achieve cleanup goals.					
	Factual Basis: Re-evaluation of the ground water treatment system showed that the contamination would not leave the boundary of the facility.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 2 Li Tungsten, NY	09/99 05/05 ESD	01/03 Ongoing	City of Glen Cove	Soil	State concurred on ESD, public availability session held in Community	Fed =$0.2M Contr. = None Est'd Increase = $0.2M
	Type of Change: From – Commercial future use of the Site; To – Residential future use.					
	Factual Basis: New zoning in the city. The ESD did not include Parcel A of the site, and in that sense the remedy re-evaluation remains ongoing.					
Region 2 Montgomery Township Housing Development, NJ	06/88 08/05 ESD	2001 2003	EPA	Ground water	NJDEP Concurred on ESD	Fed = 40 hours Cont. = None Est'd Increase = $3.0M
	Type of Change: From – Air-stripping and re-injection of the treated water back into the underlying aquifer; To – Liquid-phase granular activated carbon (GAC) adsorption and surface water discharge of the treated ground water.					
	Factual Basis: GAC adsorption was chosen based upon cost savings and broader operational flexibility and control (e.g., hydraulic operating range, effective treatment range according to influent water quality). Surface water discharge of treated water is less costly in terms of operations and maintenance than effluent re-injection via injection wells.					
Region 2 Rocky Hill Municipal Well, NJ	06/88 08/05 ESD	2001 2003	EPA	Ground water	NJDEP concurred on ESD	Fed = 40 hours Contr. = None Est'd Increase = $3.0M
	Type of Change: From – Air-stripping and re-injection of the treated water back into the underlying aquifer; To – Liquid-phase granular activated carbon (GAC) adsorption and surface water discharge of the treated ground water.					
	Factual Basis: GAC adsorption was chosen based upon cost savings and broader operational flexibility and control (e.g., hydraulic operating range, effective treatment range according to influent water quality). Surface water discharge of treated water is less costly in terms of operations and maintenance than effluent re-injection via injection wells.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 3 Increases – FY 04						
Region 3 Fort Eustis (US Army), VA OU7	10/02 09/04 ESD	07/04 09/04	US Army	Soil	VDEQ reviewed and commented on the ESD. The Army published a public notice in the local newspaper	Fed = 160-200 hours Contr. = 160-200 hours* Est'd Increase = $0.2M *Note: This is a Federal Facility. The costs & time increases are for DoD costs & time.*
	Type of Change: From – Excavation and off-site disposal 20 cubic yards of buried sludge and contaminated soil; To – An additional 90 cubic yards of sludge and soil to be addressed.					
	Factual Basis: The amount of contamination was underestimated during the RI.					
Region 3 Jacks Creek/Sitkin Smelting & Refining, Inc., PA	09/97 12/04 ESD	09/04 12/04	EPA	Soil	PADEP approval.	Fed = 150 LOE hours Contr. = 30 LOE hours Est'd Increase = Minimal
	Type of Change: Implement institutional controls.					
	Factual Basis: Hot spots were found underneath certain buildings on the site, initiating use restrictions.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 3 Increases – FY 05						
Region 3 Paoli Rail Yard, PA	07/92 03/05 ESD	N/A 3/05	PRP	Waste & GW	PA DEP was consulted, Public Notice of ESDs were issued	Fed = 40-80 hours Contr. = None Est'd Increase = Not significant
	Type of Change: From: Removal of tie pile and old cleanup standard for benzene in GW; To: Groundwater cleanup standard for benzene set at the MCL and railroad tie pile allowed to remain in place.					
	Factual Basis: Per PRP request, groundwater cleanup standard for benzene set at the MCL and tie pile allowed to remain in place due to lack of PCBs above the cleanup standards.					
Region 3 Former West Virginia Ordnance Works, WV OU 2, 5	09/88 06/05 ESD	10/04 06/05	US Army	Soil	Yes, notice of availability published	Fed = 120 hours Contr. = None Est'd Increase = $0.4M
	Type of Change: From: Capping; To: Excavation and composting.					
	Factual Basis: High ground water table.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 4 Increases – FY 04						
Region 4 Coleman Evans Wood Preserving Company, FL	09/86 02/04 ESD	11/03 02/04	EPA	Soil	State concurred on ESD Notice in local paper, Community Information Meetings	Fed = 20 hours Contr.= None Est'd Increase = $1.3M
	Type of Change: From – Excavating and thermo treating a total of 135,000 cubic yards of contaminated soil; To – Excavating and treating the 135,000 cubic yards plus an additional 20,000 cubic yards of soil.					
	Factual Basis: Additional soil identified during RA.					
Region 4 Escambia Wood, FL	02/97 04/04 ESD	01/04 04/04	EPA	Soil	State concurred on ESD Public Notice, Community Information Meetings	Fed = 100 hours Contr. = None Est'd Increase = $7.0M
	Type of Change: From – Interim ROD for relocation of local residents and demolition of homes and an apartment complex; To – An ESD to start the process to change Interim ROD into final ROD. ESD to require additional off-site soil investigations.					
	Factual Basis: Evaluation of data from 10 years of pump and treating ground water at the site.					
Region 4 Oak Ridge Reservation (USDOE), TN OU 29	09/00 02/04 ESD	02/03 02/04	DOE	All Media	State concurred, Public Notice in local paper	Fed = 80 hours Contr.= None Est'd Increase = $3.5M
	Type of Change: From – 1,000 acre section of the Reservation with approximately 100 disposal areas; To – Adding an additional 3 closed waste storage units.					
	Factual Basis: At the time the ROD was issued, the 3 storage units were in use. Now that the units have been closed, investigation of these units has been added to the ROD by this ESD.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 4 Woolfolk Chemical Works, Inc., GA	08/98 08/04 ESD	05/03 08/04	EPA	Soil	State concurred, Public Meeting and Comment Period	Fed = 500 hours Contr.= 400 hours Est'd Increase = $8.0M
OU3	**Type of Change:** From – Excavation, treatment, and disposal of approximately 44,000 cy of arsenic contaminated soil and debris; To – Excavation, treatment, and disposal of approximately 116,000cy of contaminated soil and debris.					
	Factual Basis: The volume of soil and debris needing remediation significantly increased based on sampling results conducted during the RD. Proposed revisions to the arsenic MCL also contributed in part to this increase.					
Region 4 Increases – FY05						
Region 4 USDOE Oak Ridge Reservation, TN	11/99 2/05 ESD	5/04 2/05	DOE	Transported waste	State and EPA concurrence and Public Notice in the local newspaper	Fed = 50 hours Contr.= None Est'd Increase = $11.0M
OU13	**Type of Change:** From – Transporting waste over public roads; To – Construction of a 4.8 mile haul road in a restricted access area of the reservation to be used to transport waste to an on-site disposal facility.					
	Factual Basis: Decision to restrict transportation of wastes to on-site roads.					
Region 4 USDOE Oak Ridge Reservation, TN	9/2000 11/04 ESD	1/04 11/04	DOE	Demolition debris and contaminated soil	State and EPA concurrence and Public Notice in the local newspaper	Fed = 100 hours Contr. = None Est'd Increase = $2.6M
	Type of Change: Remediation of eleven additional units.					
OU29	**Factual Basis:** Identification of 11 units.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region Site Name, State OU	Date of Original ROD Date of Change (ESD/ROD-A)	Date Review Commenced Date Review Completed	Change Initiator	Media	State/Community Involvement	Est'd Resource Demands – Fed/Contr. Est'd Cost Increase
Region 5 Increases – FY 04						
Region 5 Clare Water Supply, MI	09/92 09/04 ESD	01/04 09/04	U.S. EPA	Ground water	State concurred on ESD and conducted oversight. City officials participated in ESD public meeting.	Fed = 40 hours Contr. = None Est'd Increase = $0.4M
	Type of Change: From – Use, deed and/or access restrictions as necessary; soil vapor extraction; and ground water extraction and treatment, using ultraviolet photochemical oxidation; To – Permeable reactive barrier wall, new municipal well.					
	Factual Basis: The overall site-wide remedy has been constructed and operating since March of 1999. Since then, information has come to light which necessitates modifications to three (3) aspects of the remedies that were implemented at the Site. The first relates to ground water contamination emanating from the Mitchell facility in the southwestern portion of the Site. Secondly, the City of Clare has advised U.S. EPA and the PRPs that municipal well #2, which is part of the ground water extraction network provided for in a Record of Decision signed on 9/16/1992, is failing and will need to be replaced. And finally, the Ground water Surface Water Interface (GSI) criteria provided in a 1992 Record of Decision (ROD) have become more stringent for ethylbenzene and xylene, and these new criteria are being adopted herein. As a result of the first issues permeable reactive barrier wall will be installed to intercept ground water as it leaves the site. In addition, municipal well #2 will be replaced. There is no cost differential due to the third issue.					
Region 5 Outboard Marine Corporation, IL OU 2	09/99 09/04 ESD	2004 09/04	PRPs, U.S. EPA	Soil	State reviewed and concurred, City of Waukegan reviewed.	Fed = 40 hours Contr. = None Est'd Increase = $0.1M
	Type of Change: From – Ground water cleaned up to remove arsenic, ammonia, and benzene; soils excavated and treated to stabilize PAH and arsenic; To – Excavation of an additional 1,000 cubic yards of soil and disposal off-site; reduced cleanup levels for semi-volatile organic compounds.					
	Factual Basis: The 1999 ROD called for the cleanup of the OMC-owned WCP site to commercial/industrial standards. OMC subsequently went bankrupt in December 2000 and the City of Waukegan acquired the WCP property. The City hopes to redevelop the land with high-density residential buildings and small shops. The City wanted a residential cleanup action. The PRPs identified 2 semi-volatile organic compounds in the soil that could be cleaned up to lower cleanup standards to guard against indoor air intrusion if the site is redeveloped. The ESD reduces the cleanup levels for the two compounds. Also, we acknowledge that the City may redevelop the site for residential uses if certain extra protective measures are taken by the City. The lowered standards correspond to an extra 1,000 cubic yards of soil to be excavated and disposed of off-site resulting in a cost increase of $100,000.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 5 Increases – FY 05						
Region 5 Feed Materials Production Center (USDOE), OH	12/94 01/05 ESD	06/04 11/04	US DOE	Waste	OEPA and Citizens groups involved in decision. Public meeting and 30 day comment period occurred.	Fed = 90 hours Contr. = None Est'd Increase = $14.0M
OU 4	**Type of Change:** From – No interim storage facility called for/required; To – Interim storage of the silo waste material off-site at Waste Control Specialists in Texas prior to final off-site disposal.					
	Factual Basis: This ESD allowed for interim storage of the Silo waste material off-site at Waste Control Specialists in Texas prior to final off-site disposal. The total cost of the current remedy (waste removal, treatment, off-site storage and disposal) is $350 Million.					
Region 5 Forest Waste Products, MI	06/86 09/05 ROD-A	06/04 09/05	USEPA/MDEQ	Ground water	MDEQ reviewed the ROD Amendment but did not concur.	Fed = 770 hours Contr. = $40,000 Est'd Increase = $5.2M
	Type of Change: From – Removal of drums from the landfill, construction of a RCRA cap over the landfill, a contingency for ground water remedial actions, and access and deed restrictions; To – Two stages of in-situ ground water treatment: directly downgradient from the landfill (either the in-situ submerged oxygen curtain, or the air sparging trench); and near the site boundaries and off-site (chemical oxidation, expansion of the site boundaries, updating the clean up action levels, MNA downgradient from the chemical oxidation lines, enforcement of ground water use restrictions, and a contingency for a residential well replacement.					
	Factual Basis: High VOCs were detected in a new monitoring well located north of the landfill. In 2001, vinyl chloride was detected off-site exceeding the action level. Since then monitoring has bounded the extent of the VOC contamination, and indicates that the landfill is still a source of VOCs.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 5 Johns-Manville-Waukegan, IL	06/87 05/05 ESD	09/04 04/05	Illinois Department of Natural Resources	N/A	State heavily involved via DNR and concurred with remedy change	Fed = 80 hours Contr. = None Est'd Increase = Negligible
	Type of Change: Erect physical barriers (fence extensions) so more turtles cannot enter the Site, change work practices and the timing of some of the work (most notably sand dredging) so that the turtles are not be adversely impacted or killed, and perform regular inspections for the turtles and capture and properly relocate them to the State property.					
	Factual Basis: The Illinois Department of Natural Resources discovered two Blanding's turtles (state threatened species) on their property adjacent to the Johns-Manville property. Upon further inspection, more turtles were discovered on the Johns-Manville property. The media is N/A because the ESD is designed to protect a threatened species, not to address soil, sediment, air, water, etc.					

Region 6 Increases – FY 04						
Region 6 Sol Lynn/Industrial Transformers Site, TX	09/88 09/04 ROD-A	2000 09/04	EPA, State	Ground water	State commented and concurred with the amended remedy; Community had no adverse comments.	Fed = $2.8M Contr.= 17,383 hours Est'd Increase = $3.5M
	Type of Change: From – Ground water pump-and-treat; To – In-situ bioremediation plus monitored natural attenuation.					
	Factual Basis: Remedy change was necessary because the original pump-and-treat remedy was not satisfactorily recovering source material (DNAPL) and could not achieve the remediation goals.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 6 Increases – FY 05						
Region 6 Delatte Metals, LA	09/00 12/04 ESD	11/02 12/04	Joint (EPA/ USFWS/ State)	Soil, battery sludge	Newspaper notice	Fed = 80-120 hours Contr. = None Est'd Increase = $3.2M
	Type of Change: No change from the original remedy selected.					
	Factual Basis: Increased costs associated with the permeable reactive barrier wall installation, additional required lime application, additional clear and grub activity, additional survey subcontractor costs, additional excavation/treatment/disposal costs, additional surface restoration and the need for storm water control.					
Region 7 Increases – FY 05						
Region 7 Valley Park TCE, MO	09/01 08/05 ESD	09/03 08/05	EPA	Soil and GW	State Concurrence	Fed = N/A Contr. = N/A Est'd = $0.4M
	Type of Change: From – a) most contaminated soils treated onsite by exsitu and insitu soil vapor extraction and some soils disposed offsite; b) contaminated GW treated by air stripping at two commercial properties followed by reinjection into aquifer – To a) most soil disposal offsite and insitu SVE onsite; and b) no air stripping and discharge into storm sewer.					
	Factual Basis: New information developed during design identified these changes					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 8 Increases – FY 04						
Region 8 Rocky Mountain Arsenal (USARMY), CO OU 3 – Burial Trenches	06/96 07/04 ESD	06/03 07/04	US Army	Soil	Public Concurred	Fed = None Contr. = None Est'd Increase = $2.8M
	Type of Change: 34 new remedy areas were added to the project and excavation of the additional soils was incorporated.					
	Factual Basis: New information was obtained by the Army during detailed document review and developed during additional field design investigation.					
Region 8 Rocky Mountain Arsenal (USARMY), CO OU 3 - North Plants Structure Demolition and Removal Project	06/96 09/04 ESD	05/04 09/04	US Army	Soil	Public Concurred	Fed = None Contr. = None Est'd Increase = $0.8M
	Type of Change: Three surface soil areas were added as human health exceedance soils, two remediation areas were added.					
	Factual Basis: New information was obtained by the Army during detailed document review and developed during additional field design investigation.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 8 Increases – FY 05						
Region 8 Central City, Clear Creek, CO	09/91 06/05 ESD	04/05 06/05	EPA	Tunnel Discharge – Surface Water	concur	Fed = $0.3M Contr. = None Est'd Increase = $0.3M
	Type of Change: From – Interim Waiver; To – Conveyance to the Argo Tunnel Water Treatment Plant for Treatment thru the plant.					
	Factual Basis: Additional water quality monitoring indicates that discharge from the Big Five Tunnel should be treated to eliminate its impact on the main stem of Clear Creek thereby contributing to reduction of contaminants with a goal of meeting State Water Quality Standards.					
Region 8 F.E. Warren Air Force Base, WY	09/01 11/04 ROD-A	08/04 11/04	US AIR FORCE	Ground water	No Opposition	Fed = N/A Contr. = N/A Est'd Increase = $1.5M (Based on Net Present Value)
	Type of Change: From – Pump and treat; To – In-Situ Chemical Oxidation with MNA.*					
	Factual Basis: Remedial Design pump tests established that long-term pumping is not feasible. *"Hot Spot" treatment was added to MNA to get a similar remedial time frame with faster shot-term risk reduction.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 9 Increases – FY 04						
Region 9 Newmark Ground Water Contamination OU 1, 2	8/93 (Interim) 3/95 (Interim) 8/04 ESD	2004 8/04	EPA	Ground water	State and City of San Bernardino agree to the institutional controls (ICs)	Fed = Minimal Contr. = Minimal Est'd Increase = Minimal
	Type of Change: From – Extract GW & treat by liquid phase granular activated carbon and delivery of treated water to city for distribution to the public or water will be recharged to the aquifer; To – Add ICs to protect and enhance the barrier well system. ESD requires a GW management plan.					
	Factual Basis: Original interim remedies did not include ICs.					
Region 9 Tracy Defense Depot, CA	04/98 09/04 ESD	2003 09/04	DoD	Soil	State involved. Little to no community interest	Fed = N/A Contr = 120 hours Est'd Savings = Minimal increase to track ICs.
	Type of Change: From: No Instituted land use controls sitewide, Soil Vapor Extraction for one site, and cover type of aggregate base for one site To: Institutional land use controls sitewide, deletion of soil vapor extraction as a remedy for one site and 12 percent grass cover type for another site					
	Factual Basis: To document ICs/LUCs. The cleanup standards were revised for 3 sites because updated fate and transport modeling demonstrated no threat to groundwater from residual contamination that was difficult to remove. The SVE was deleted because it was not deemed as effective for TPH soil contamination found post-ROD and ICs were implemented to prevent disturbance of existing cover, thereby reducing leaching and contact. The grass cover was allowed to replace the aggregate base cover because it was not economical to place aggregate base cover around structures in the area and ICs were implemented to prevent incompatible uses in the grassy area of the site.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 9 Tucson International Airport Area, AZ	08/88 09/04 ROD-A	2003 09/04	EPA	Ground water	11 comments received in writing, Public meeting addressed comments, Bi-monthly community advisory board meetings	Fed = N/A Contr = N/A Est'd Savings =$7.6M
	Type of Change: Increased efficiency of 2 ground water pump-and-treat systems with an MNA contingency option for the 2nd system.					
	Factual Basis: This ROD Amendment adopts the same general process as the original ROD, extraction, treatment, and reuse, but incorporates and relies upon new information obtained since the signing of the original ROD including: the identification of West Plume B and the further delineation of the West-Cap ground water plume. These plumes exceed the Federal MCLs and pose a threat to the nearby remedial actions at the Texas Instruments Project Area and the Arizona Air National Guard Project Area.					

Region 9 Increases – FY 05						
Region 9 Beckman Instruments (Porterville Plant), CA	09/89 9/05 ROD-A	12/04 09/05	EPA	GW	Provided 30 day public comment period	Fed = $30,000 Contr. = $2,000 Est'd Increase = $0.4M
	Type of Change: From – No action; To – Monitored natural attenuation with existing institutional controls.					
	Factual Basis: EPA 5 year review for the site indicated ROD had not functioned as designed and would not be able to achieve cleanup goals for lower aquifer.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 9 McCormick & Baxter Creosoting Co., CA OU 3	03/99 09/05 ESD	05/05 09/05	EPA	Sediment/ Surface Water	Fact sheet	Fed = 103 hours Contr. = None Est'd Increase = $4.1M
	Type of Change: From – Two foot sand cap; To – Inclusion of bank stabilization and relocation of a citizen who's presence impacted proper bank stabilization.					
	Factual Basis: Study indicated banks were eroding into slough and could be source of recontamination following sediment cap installation.					
Region 9 San Gabriel Valley, CA	1998 (Interim) 06/05 ESD	2002 06/05	EPA	Ground water	State concurred with ESD	Fed = N/A Contr. = N/A Est'd Increase = Up to $15.0M in capital costs and up to $1.5M per year additional O&M.
	Type of Change: From –To contain VOCs in shallow and intermediate GW zones with carbon adsorption and air stripping; To: Add ultraviolet light treatment for dioxane and either biotreatment or ion exchange for perchlorate					
	Factual Basis: Additional sampling showed two new contaminants of concern in GW – 1,4 dioxane and perchlorate. Existing treatment system will not work on 1, 4 dioxane and perchlorate.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 10 Increases – FY 04						
Region 10 Commencement Bay, Near Shore/Tide Flats, WA OU 1	1989 09/04 ESD	01/89 01/05	EPA	Sediment	State and Community	Fed = None Contr. = None Est'd Increase = None
	Type of Change: From – Site use restrictions, source control, natural recovery, sediment remedial action (i.e., confinement, dredging and habitat mitigation), and monitoring; To – Placement of dredged sediment at an alternate location, alternative sources of capping material, Capacity of the St. Paul CDF and sediments dredged from the Thea Foss and Wheeler-Osgood Waterways, habitat mitigation projects, Clarification of selected remedy and consideration of federal de-authorization of the navigation channel, ICs.					
	Factual Basis: These differences are the result of changes in the cleanup plan due to finalizing the designs and modifications based on the actual work completed in the Head of the Thea Foss Waterway.					
Region 10 Hanford 100-Area (USDOE), WA OU27	1999 02/04 ESD	01/04 02/04	USDOE & EPA	Soil and debris with hazardous and mixed waste	State supports ESD. Fact sheet and public notification	Fed =18 hours Contr. = None Est'd Increase = $32.0M
	Type of Change: From – 209 waste sites; To – 237 waste sites, 10 CFR 1022 AND 40 CFR Part 6, Appendix A as ARARs, and revised annual institutional controls report submittal date to be consistent with the requirements contained in the Hanford sitewide institutional controls report.					
	Factual Basis: Ongoing remedial activities have identified 28 newly discovered waste sites that have a potentially unacceptable risk to human health and the environment. In accordance with the ROD, publication of an ESD is required to add newly discovered waste sites.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 10 Hanford 300-Area (USDOE),WA OU 3	04/01 04/04 ESD	2000 2004	Tri-Party Agencies: EPA, Energy, Ecology	Hazardous waste, Mixed waste, Soil	Public notification. State supported remedy changes	Fed = 40 hours Contr. = 20 hours Est'd Increase = $0.8M
	Type of Change: From – Uranium cleanup level identified in the Record of Decision; To – Change to the uranium cleanup level, modified soil cleanup levels from industrial to unrestricted use for 8 outlying waste sites in the 300-FF-2 OU. Also modified soil cleanup levels for the remainder of 300-FF-2 waste sites from 350 pCi/g to 267 pCi/g for the protection of groundwater.					
	Factual Basis: The eight outlying sites were determined to have a reasonably anticipated future land use other than just industrial. The soil cleanup levels for groundwater protection were set as the result of a study performed in 2000, 2001, and 2002 that was required by the initial 300-FF-2 ROD.					
Region 10 Idaho National Engineering Lab (USDOE), ID OU 3	11/99 02/04 ROD-A	11/04 2/04	EPA	Tank contents and Soil	State reviewed and commented on ESD. Notice to public in local papers	Fed =N/A Contr. =0 Est'd Increase = $0.1M
	Type of Change: From – Soil and tank removal, ex situ treatment of tank contents, and disposal; To – Chemical oxidation/reduction followed by stabilization of tank contents.					
	Factual Basis: A ROD Amendment is necessary because modification of the original selected remedy for the V-Talks contents was required after the proposed technology became commercially unavailable, and the risk of it remaining unavailable was considered to be too high to proceed under the existing 1999 ROD.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 10 Idaho National Engineering Lab (USDOE), ID	10/99 07/04 ESD	10/03 02/04	Dept of Energy	Ground water and soil	ESD signed by Idaho Department of Environmental Quality. ESD description and notice of availability planned for Idaho newspapers.	Fed = 40 hours Contractor = 20 hours Est'd Increase = $0.1M
OU 3-13	**Type of Change**: From – Ground water monitoring with contingent pump and treat; To – Expanded scope to include targeted groundwater sampling in the vicinity of a facility injection well to verify that the well is not a residual source of radionuclide contamination to the aquifer. In addition, the ESD addressed three Idaho Nuclear Technology Engineering Center soil sites; Sites CPP-81 and 82 require no action, and Site CPP-61 requires institutional controls to restrict exposure to low levels of radionuclides and PCBs.					
	Factual Basis: The Idaho Nuclear Technology Engineering Center groundwater monitoring conducted following the OU 3-13 ROD indicated that groundwater in the vicinity of the CPP-23 injection well was not a residual source of contamination to the aquifer. Based on a review of historical site data, the CPP-81, -82, and -61 soil sites were identified for no action or institutional controls consistent with the decisions for similar soil sites under the OU 3-13 ROD.					
Region 10 Northwest Pipe & Casing/Hall Process Co., OR	06/00 03/04 ESD	2001 03/04	EPA	Soil	Oregon DEQ concurrence w/ESD Oregon Division of State Lands (wetlands reg) review & approval of wetlands design	Fed. = N/A Contr. = Minimal for design; $0.2M for construction; minimal for yearly for O&M Est'd Increase = $0.1M for wetland restoration
OU1	**Type of Change:** From – Soil hot spots removal, soil cap, wetlands restoration and institutional controls; To – Revised soil cleanup level for vinyl chloride, construction of a wetland restoration, identification of ARARs.					
	Factual Basis: During the phase 1 soil remedial design and remedial action, site conditions were encountered that resulted in the completion of additional activities, i.e., not originally anticipated nor described in the ROD. Circumstances regarding available analytical methods for the contaminant vinyl chloride resulted in revisions to the soil cleanup verification method and the soil cleanup level for vinyl chloride. Wetlands were discovered on the site, resulting in the inclusion of wetland ARARs and development of a restoration measure to compensate for the loss of existing wetlands resulting from the soil cap placement. Other minor changes to the remedy were made.					

Summary of Remedy Update Information for FY04 and FY05 for Sites With Cost Increases

Region **Site Name, State** **OU**	**Date of Original ROD** **Date of Change (ESD/ROD-A)**	**Date Review Commenced** **Date Review Completed**	**Change Initiator**	**Media**	**State/Community Involvement**	**Est'd Resource Demands – Fed/Contr.** **Est'd Cost Increase**
Region 10 Puget Sound Naval Shipyard Complex, WA OU2	06/00 02/04 ROD-A	09/03 02/04	Navy & EPA	Sediment	State and Suquamish Tribe supported remedy changes	Fed = 80 hours Contr. = 50 hours Est'd Increase = $0.8M
	Type of Change: From – Cleanup of marine sediments included a combination of dredging with disposal in a confined aquatic disposal (CAD) pit, capping, enhanced natural recovery, monitored natural recovery and institutional controls; To – A change in the boundary of OUB Marine to address additional sediment cleanup areas, modify action levels for the response action on Washington Owned Aquatic Lands (SOAL) adjacent to the Navy's CAD pit, require additional cleanup on SOAL (enhanced natural recovery) and address institutional control requirements on SOAL. The ESD does not change any of the remedial action objectives stated in the ROD.					
	Factual Basis: Unanticipated contamination was discovered on SOAL as a result of the disposal of contaminated sediments in the CAD pit. The Navy spent approximately $11 million dollars on the initial remedial action as required By the ROD. The SOAL remedial action cost an additional $772,000.					

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